ORSAR 1990

Ontario Road Safety Annual Report

Ontario

Ministry
of
Transportation

'90 ontario road safety annual report

1990

Ontario
Road Safety
Annual
Report

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minister's message

Road safety is everyone's responsibility. With 6.3 million licensed drivers and approximately 7.4 million registered vehicles in Ontario, it's more important than ever that our highways are as safe as possible.

Ontario's Ministry of Transportation is committed to a safe highway system, where motorists observe the posted speed limit; all drivers and passengers buckle up and where parents use proper safety restraints for infants and children.

Most of all, we strive for a system where drivers of all ages show respect for other motorists. It is not always an easy task. And it's not one we can do alone. Each and everyone of us must be responsible when using our highways. Laws alone will never be a substitute for common sense on Ontario's roads.

It's encouraging to see the number of collisions declining. In 1990 the number of crashes decreased by approximately 20,000 with approximately 50,000 fewer drivers involved. As a result, the number of people injured was reduced by 18,000 and there were 166 fewer fatalities.

As encouraging as the trend may be, there is still much more to be done. Driver error is still the major cause of collisions. The human cost is staggering. That is why road safety is now seen as an important public health issue that requires the attention of many people and organizations. Increased awareness, coupled with safety initiatives developed by our ministry and other organizations, is paying some dividends. For example, a number of government, public and private groups have organized anti-drinking and driving campaigns. As a result, the number of alcohol-involved drivers killed in motor vehicle collisions fell from a high of 59 per cent in 1981 to 36 per cent in 1990.

Seat belt use is on the increase thanks to campaigns mounted by the ministry, the police and the insurance industry. Such co-operative efforts mean the message to buckle up is getting out. After all, it's the law.

The Ontario Road Safety Annual Report is a valuable document which reflects the current state of road safety in Ontario. This report represents a commitment by the Government of Ontario to monitor and improve road safety. In addition, the development of Ontario's first Road Safety Organization is under way. One of its main goals is to make roads safer for all Ontarians. The agency will co-ordinate and provide leadership for all groups involved in promoting road safety.

We are only too aware of the human costs of collisions. The challenge for us is to demonstrate our responsibility by continuing to work together for a safer highway system.

Gilles Pouliot,
Minister of Transportation

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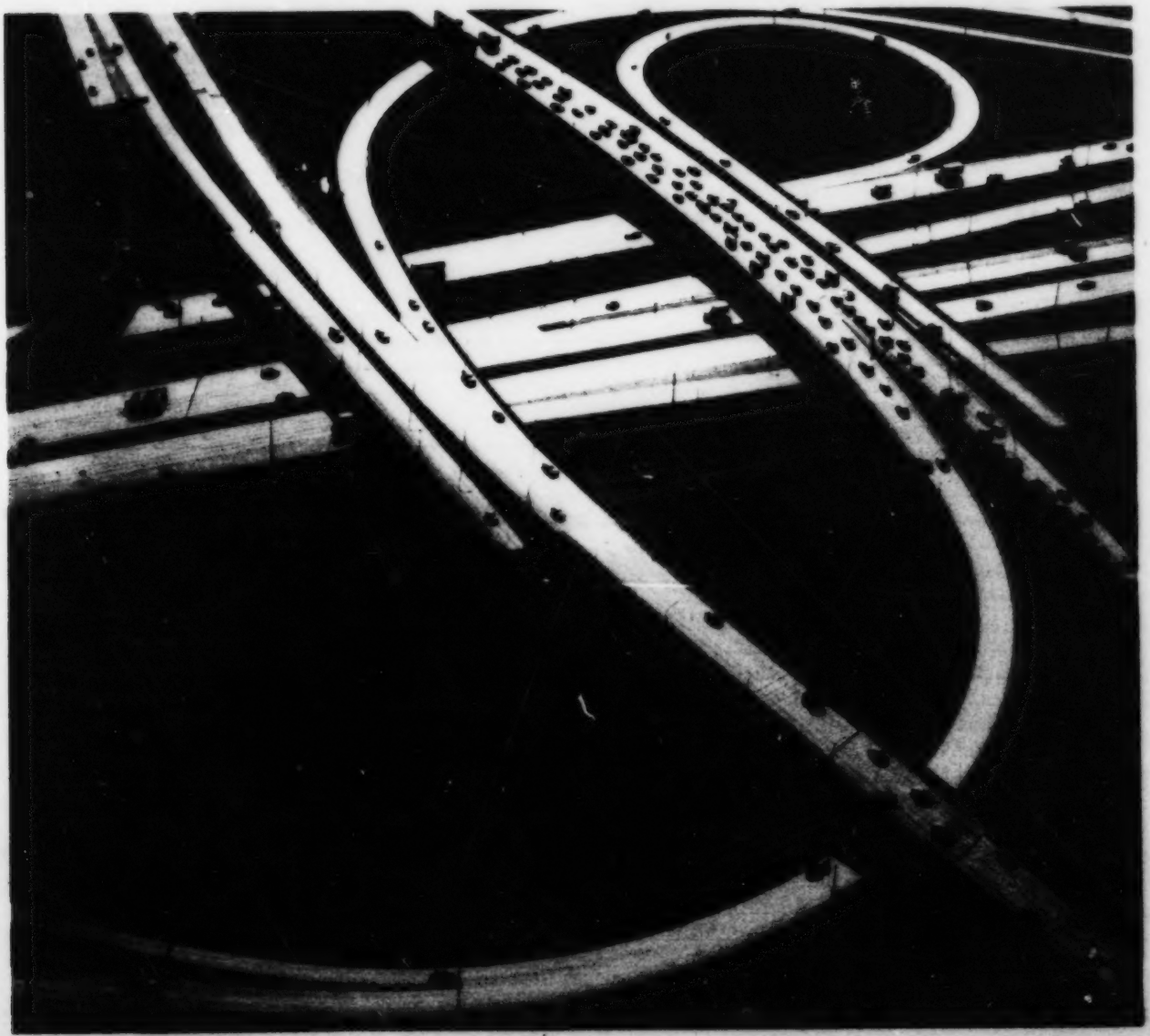
1 overview



1a. synopsis

In 1990, approximately 6.1% of the drivers and 6.8% of vehicles in the province were involved in accidents.

There were 1,120 people fatally injured in motor vehicle accidents , while 101,575 people suffered some degree of personal injury. The fatally injured comprised 540 drivers (not including motorcycle drivers), 322 were passengers, 154 pedestrians, 68 motorcycle drivers, and 6 motorcycle passengers. Other classes of road users accounted for 36 deaths.

In total, there were 220,188 accidents involving 411,271 vehicles. Of all accidents, 959 resulted in one or more people being killed, while in 65,912 accidents at least one person was injured.

In terms of alcohol involvement, tests for the presence of alcohol among drivers who were killed showed that 156 (28.9%) were legally impaired and 36 (6.7%) had consumed alcohol but were not found to be legally impaired.

People in the 16 - 20 year age group continue to be over-represented in accidents, and particularly in fatalities. In 1990, 92 motor vehicle and motorcycle drivers in this age group were killed and 8,055 were injured.

Selected Statistics	
Total Reportable Accidents	220,188
Total Drivers Involved in Accidents	392,482
Total Vehicles Involved in Accidents	411,271
Fatal Accidents	959
Personal Injury Accidents	65,912
Property Damage Accidents	153,317
Persons Killed	1,120
Drivers Killed	608
Drivers Killed (Impaired or Had Been Drinking)	192
Passengers Killed	322
Pedestrians Killed	154
Other Road Users Killed	36
Persons Injured	101,575
Estimated Ontario Population (1990)	9,743,300
Licensed Drivers	6,448,883
Registered Motor Vehicles	6,080,596
Estimated Vehicle Kilometres Travelled (in millions)	73,341
Number of Persons Killed in Motor Vehicle Accidents per 100,000 People in Ontario	11.5
Number of Persons Killed in Motor Vehicle Accidents per 100 Million Kilometres Travelled	1.5
Accident Rate per 100 Million Kilometres Travelled	300.2
Fatal Accident Rate per 100 Million Kilometres Travelled	1.3

1b. selected characteristics of motor vehicle accidents in 1990

Note: *On January 1, 1988 a new Motor Vehicle Accident Report Form was introduced. These data includes the changes which were made on the form used by police forces in Ontario, and which forms the basis for the accident statistics compiled by the province of Ontario. This has resulted in changes in the ways in which the data are compiled. As a result, some of the information may not be directly comparable to data* from years prior to 1988.

Persons Killed and Injured

In 1990, 1,120 people were killed in traffic accidents in Ontario. This represents a decrease of 166 deaths from the previous year. The number of injuries, 101,575, is down approximately 18,000 from 1989. These decreases are part of a general decrease in the number of accidents in 1990. Decreases of this type are often found during a recessionary period. Generally speaking, there were fewer vehicles, drivers and passengers in transit on Ontario roads. This resulted in fewer accidents, people in accidents, injuries and fatalities.

Road User Age

Young drivers continue to be over-represented in motor vehicle accidents relative to their share of the licensed driver population. While drivers under the age of 24 made up 15% of the driver population, they comprised 24% of the drivers involved in accidents. Almost one sixth of all sixteen year old drivers were involved in accidents.

Although older drivers are under-represented in all motor vehicle accidents, they were over-represented in driver fatalities. In 1990, 12.6% of drivers killed were over 65 years of age, while only comprising 5% of the drivers involved in accidents. Of the 154 pedestrians killed in 1990, 24% were over 65 years of age. Of the 5,839 pedestrians injured in accidents, 591 or 10%, were in this age group.

Driver Action

Drivers who were driving properly at the time of their collision continue to average around 45%. Failure to yield the right of way, speed too fast, loss of control and following too closely continue to be the most frequently reported driver errors in all accidents. Excessive speed continues to be the leading driver action, cited in 16.2% of fatal accidents. In fatal motorcycle accidents, excessive speed and loss of control were cited in 60% of these cases.

Alcohol Involvement

Alcohol involvement continued to be the leading non-normal driver condition reported in all accidents . Alcohol was involved in 35.5 % of the 541 drivers killed in 1990 for whom alcohol use was recorded. Alcohol involvement in accidents by age show that approximately 3.4% of drivers 16 to 20 years had been drinking. This increased in the 21 to 24 and 25 to 34 year old age groups to 5.4%. The percentages decrease from these groups to a low of .7% in the 75 and over age group. Alcohol involvement was also a factor in pedestrian fatalities and injuries. Alcohol involvement was reported in 24% of pedestrians killed, and 9.4% of those injured.

1c. the health perspective

Hospital Emergency Departments receive most people injured in motor vehicle accidents. The majority of those have sustained minimal or minor injuries and are therefore released without being admitted to hospital for in-patient care. However, people suffering major and severe injuries are admitted as in-patients. Detailed statistics are captured for in-patients and described below.

Between April 1, 1989 and March 31, 1990, there were 13,610 acute (short term) hospital admissions related to motor vehicle accidents.

The 13,610 acute hospital admissions resulted in 164,405 hospital days of stay during the fiscal year 1989-90, making the average stay per admission 12.1 hospital days.

Selected Diagnoses of Motor Vehicle Accident Injuries Hospitalized in Ontario, 1989/90

Selected Diagnoses	Hospital Admissions	Hospital Days of Stay
Fracture of skull	848	11,073
Fracture of neck and trunk	2,131	37,240
Fracture of upper limb	889	7,990
Fracture of lower limb	2,153	34,955
Dislocation, sprains and strains	677	3,219
Intracranial injury, excluding those with skull fracture	2,706	32,541
Internal injury of chest, abdomen and pelvis	789	8,596
Open wound of head, neck and trunk	512	1,786
Open wound of upper limb	83	328
Open wound of lower limb	135	1,470
Other injuries, burns and traumatic complications	2,687	25,207
Total Admissions and Days	**13,610**	**164,405**

According to data provided by the hospitals 5,697 patients underwent surgery in the course of their hospital treatment and 305 patients died in the hospital subsequent to their admission for in-patient care.

Ninety-five per cent of those hospitalized were Ontario residents, 2% were Quebec residents, and the rest of the patients were residents of other Canadian provinces and the United States.

Selected Surgical Procedures for Motor Vehicle Accident Injuries Hospitalized in Ontario, 1989/90

Selected Procedures	Hospital Admissions	Hospital Days of Stay
Operations on skull, brain and cerebral meninges	270	12,406
Operations on spinal cord and canal structures	101	2,363
Operations on nose, mouth and pharynx	121	904
Operations on chest wall, pleura, mediastinum and diaphragm	156	2,004
Operations on bone marrrow and spleen	132	2,101
Operations on kidney	130	1,141
Operation on facial bones and joints	285	3,068
Reduction of fracture and dislocation	2,422	37,246
Repair and plastic operations on joint structures	227	5,932
Operations on skin and subcutaneous tissue	862	6,031
Other surgical procedures	991	18,477
Sub-total of surgical admissions and days	**5,697**	**91,673**
No surgical procedures reported	**7,913**	**72,732**
Total Admissions and Days	**13,610**	**164,405**

2 the people

In 1990, there were 6,448,883 drivers licensed in the province of Ontario. This represents an increase of 158,459, or 2.5% over the previous year. Traffic accidents resulted in 1,120 fatalities, a decrease of 166. Injuries decreased by approximately 18,000 people. These decreases reverse a trend toward slight increases in the past few years.

Young, inexperienced drivers continue to be over-represented in traffic collisions. 176 people between the ages of 16 and 20 lost their lives in traffic accidents in 1990. Of these, 52.3% were drivers (includes motorcycles) 36.9% were passengers, 8.5% were pedestrians, and the remaining 3.3% were cyclists.

At the other end of the spectrum, 37.6% of individuals age 65 and over which were killed in 1990 were drivers, 29.3% were passengers, 31.5% were pedestrians and the remaining 1.6% were cyclists.

In total, 85 children under 16 were killed in 1990. Of these, 61.2% were passengers, 20.0% were pedestrians, 10.6% were cyclists, and the remaining 8.2% were drivers.

Although alcohol involvement remains the single most significant factor in accident fatalities, the trend over the last several years has seen a reduction in alcohol involvement in traffic accidents. This trend continued in 1990. The percentage of fatally injured drivers who had been drinking decreased while the percentage of these drivers who were alcohol impaired increased.

2a. people in accidents

Table 2.1 Category of Involved Person by Severity of Injury in Fatal and Personal Injury Accidents 1990

Category of Involved Person	Severity of Injury					Total
	None	Minimal	Minor	Major	Fatal	
Driver	58,633	31,645	19,947	3,481	540	**114,246**
Passenger*	36,741	18,341	12,977	2,288	321	**70,668**
Pedestrian	127	2,178	2,770	891	154	**6,120**
Cyclist	83	1,791	1,497	230	29	**3,630**
Cyclist Passenger	22	105	53	14	-	**194**
All Terrain Vehicle Driver	2	8	15	9	-	**34**
All Terrain Vehicle Passenger	1	3	5	2	-	**11**
Snow Vehicle Driver	6	13	9	15	1	**44**
Snow Vehicle Passenger	-	4	-	5	-	**9**
Motorcycle Driver	179	816	1,129	447	68	**2,639**
Motorcycle Passenger	90	196	286	98	6	**676**
Moped Driver	3	14	14	4	-	**35**
Moped Passenger	1	1	1	2	-	**5**
Hanger On	40	38	54	19	1	**152**
Other	2,232	82	67	11	-	**2,392**
Total	**98,160**	**55,235**	**38,824**	**7,516**	**1,120**	**200,855**

* Includes bus passengers

Due to a change in the method of tabulating accident statistics, this table excludes the uninjured victims involved in property damage only accidents.

Fatal	Person killed immediately or within 30 days of the motor vehicle accident.
Major	Person admitted to hospital. Includes person admitted for observation.
Minor	Person went to hospital and was treated in the emergency room but was not admitted.
Minimal	Person did not go to hospital when leaving the scene of the accident. Includes minor abrasions, bruises and complaint of pain.
None	Uninjured person.

Approximately 49 % of people involved in accidents in which somebody was killed or injured were not injured themselves.

Figure 2.1 Persons Killed 1981 - 1990

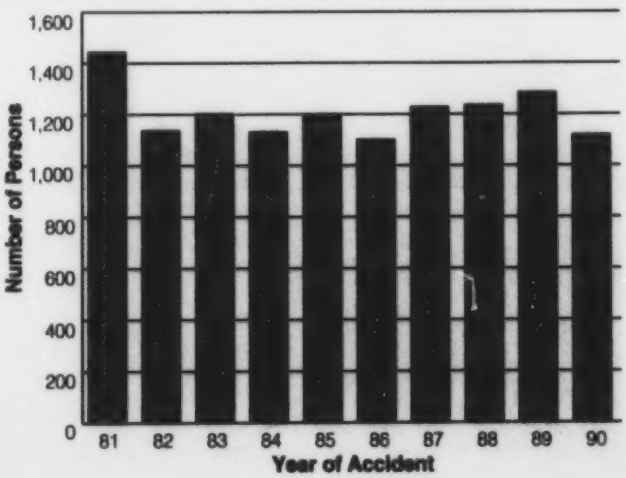


Table 2.2 Category of Persons Killed by Age Groups 1990

Category of Persons	Age Groups																Total
	0-4	5-9	10-15	16	17	18	19	20	21-24	25-34	35-44	45-54	55-64	65-74	75+	UK	
Driver	-	1	3	7	12	12	26	20	61	126	101	49	52	39	29	2	540
Passenger*	20	7	25	13	9	14	17	11	44	48	28	17	16	29	24	-	322
Pedestrian	6	9	2	2	3	3	5	2	8	24	10	13	10	19	38	-	154
Cyclist	-	2	7	1	2	-	1	-	3	3	3	-	4	3	-	-	29
Cyclist Passenger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV Driver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV Passenger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Snow Vehicle Driver	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Snow Vehicle Passenger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motorcycle Driver	-	-	3	-	3	1	4	7	21	14	14	-	1	-	-	-	68
Motorcycle Passenger	-	-	-	-	-	-	1	-	3	-	2	-	-	-	-	-	6
Moped Driver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moped Passenger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**26**	**19**	**40**	**23**	**29**	**30**	**54**	**40**	**140**	**216**	**158**	**79**	**83**	**90**	**91**	**2**	**1,120**

*Includes one hanger on

Persons in the 16 to 24 year age group continue to be over-represented in fatalities, comprising 316 (28.2%) of those killed. While drivers in this age group only comprise 15.2% of all licensed drivers, their deaths (138) represent 25.6% of all driver fatalities.

Eight per cent of all fatalities were under the age of 16. A majority of these children were passengers. The next largest group were pedestrians followed by cyclists and finally drivers (includes motorcycles).

Figure 2.2 Persons Injured and Severity of Injuries 1981 - 1990

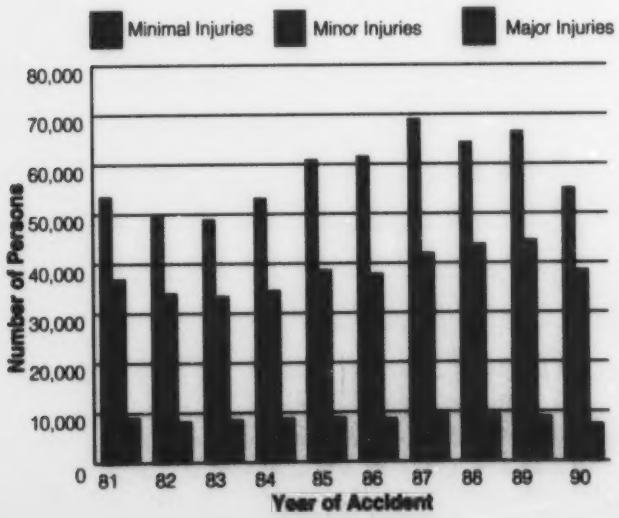


Figure 2.3 Per Cent of Total Persons Killed by Age 1990

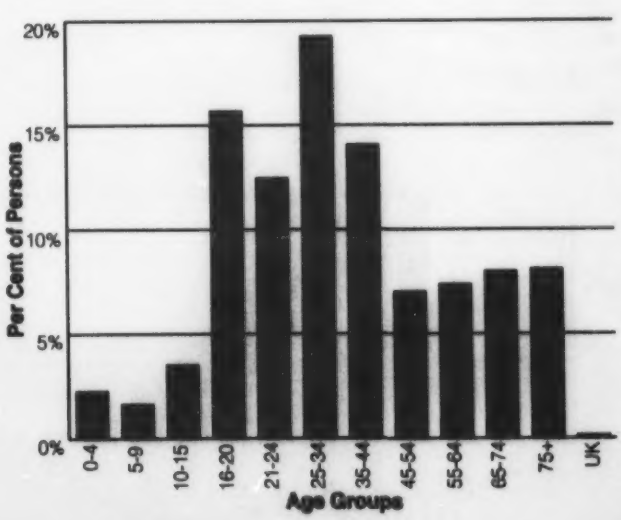


Table 2.3 Category of Persons Injured by Age Groups 1990

Category of Persons	Age Groups																Total
	0-4	5-9	10-15	16	17	18	19	20	21-24	25-34	35-44	45-54	55-64	65-74	75+	UK	
Driver	17	6	86	899	1,388	1,540	1,734	1,770	6,903	16,285	11,203	6,365	3,927	2,056	838	56	**55,073**
Passenger*	1,645	2,107	3,074	1,248	1,321	1,264	1,300	1,159	3,761	6,203	3,568	2,387	1,942	1,429	776	533	**33,717**
Pedestrian	226	651	828	110	143	116	109	134	439	945	624	422	405	316	275	96	**5,839**
Cyclist	136	340	934	154	153	123	122	111	386	575	218	90	54	35	16	71	**3,518**
Cyclist Passenger	2	22	44	8	9	7	7	3	22	29	11	3	1	3	1	-	**172**
ATV Driver	-	1	12	4	3	2	2	1	1	3	-	-	1	1	1	-	**32**
ATV Passenger	-	1	5	2	-	1	-	-	-	1	-	-	-	-	-	-	**10**
Snow Vehicle Driver	-	-	5	4	3	7	2	1	5	5	2	-	1	1	-	1	**37**
Snow Vehicle Passenger	-	-	2	2	-	2	-	-	2	-	1	-	-	-	-	-	**9**
Motorcycle Driver	3	1	26	70	108	165	205	176	526	702	282	90	30	5	1	2	**2,392**
Motorcycle Passenger	3	3	33	36	47	56	59	36	108	115	57	18	1	1	-	7	**580**
Moped Driver	-	1	1	1	1	4	2	2	5	5	5	1	3	1	-	-	**32**
Moped Passenger	-	-	-	-	1	-	1	1	-	1	-	-	-	-	-	-	**4**
Other	-	-	5	3	2	2	2	2	11	54	29	22	18	7	3	-	**160**
Total	**2,032**	**3,133**	**5,055**	**2,541**	**3,179**	**3,289**	**3,545**	**3,396**	**12,169**	**24,923**	**16,000**	**9,398**	**6,383**	**3,855**	**1,911**	**766**	**101,575**

*Includes 111 hanger ons

Approximately 10% of individuals injured in Highway Traffic Act reportable accidents were under the age of 16. Forty per cent of all cyclists injured were less than 16 years old. A similar percentage of ATV drivers and bicycle passengers were under 16. Sixty percent of ATV passengers were in this age category. Of all Motorized Snow Vehicle passengers, 22% were less than 16, while 14% of drivers of these vehicles were in this age group.

Figure 2.4 Per Cent of Total Persons Injured by Age 1990

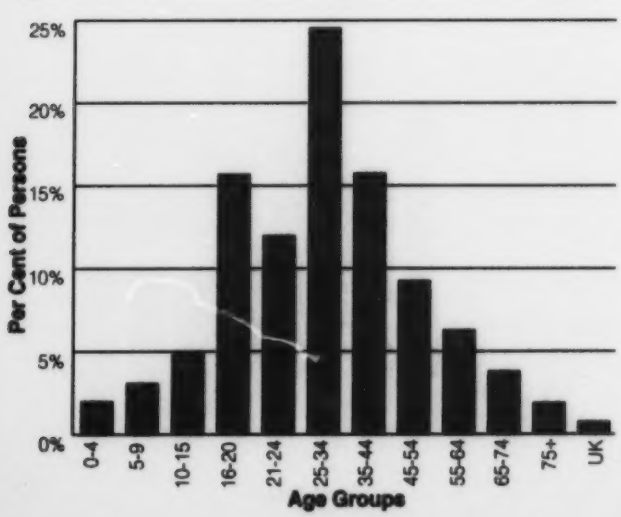


Table 2.4 Sex of Driver by Class of Accident 1990

Sex of Driver	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
Male	1,302	80,800	178,424	**260,526**
Female	318	37,670	73,718	**111,706**
Unknown	18	3,423	16,809	**20,250**
Total	**1,638**	**121,893**	**268,951**	**392,482**

While male drivers comprise 55% of the driver population, they account for 66% of the drivers involved in motor vehicle accidents. Male drivers were involved in 79% of the fatal accidents, and 66% of both personal injury and property damage accidents.

Figure 2.5 Per Cent Driver Condition In Fatal Accidents 1981 - 1990

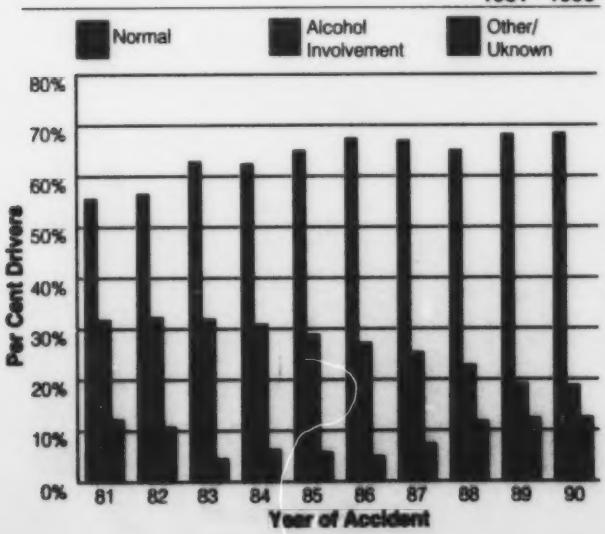


Table 2.5 Driver Condition by Class of Accident 1990

Condition of Driver	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
Normal	1,122	102,588	224,550	**328,260**
Had Been Drinking	101	3,749	4,861	**8,711**
Ability Impaired - Alcohol over .08	184	2,187	2,863	**5,234**
Ability Impaired Alcohol	24	873	949	**1,846**
Ability Impaired Drugs	2	77	91	**170**
Fatigue	34	648	851	**1,533**
Medical Physical Defect	6	455	335	**796**
Inattentive	27	3,930	7,800	**11,757**
Other	12	194	377	**583**
Unknown	126	7,192	26,274	**33,592**
Total	**1,638**	**121,893**	**268,951**	**392,482**

Had Been Drinking — Driver had consumed alcohol but his/her physical condition was not legally impaired.

Ability Impaired Alcohol over .08 — Driver had consumed alcohol and upon testing was found to have a blood alcohol level in excess of 80 mg.

Ability Impaired Alcohol — Driver had consumed sufficient alcohol to warrant being charged with a drinking and driving offence.

Inattentive — Driver was operating a motor vehicle without due care and attention or placing less than full concentration on driving, e.g., changing radio stations, consuming food, reading, talking on phone or two-way radio, using headphones.

Over 15,000 drivers had been drinking prior to being involved in the accident. Alcohol consumption was involved in 4.0% of all accidents. In property damage accidents, 3.2% of drivers were alcohol involved This increased to 5.6% of personal injury accidents and 19.0% of accidents involving fatalities.

Table 2.6 Driver Age by Driver Condition in all Accidents 1990 *

Driver Age	Driver Condition						Total
	Normal	Had Been Drinking	Impaired Alcohol over.08	Ability Impaired Alcohol	Other	Unknown	
Under 16	1,702	30	4	3	211	139	**2,089**
16	5,675	89	21	9	357	271	**6,422**
17	8,387	179	47	14	520	391	**9,538**
18	9,161	266	89	23	484	448	**10,471**
19	9,623	416	142	31	536	500	**11,248**
20	9,862	413	162	45	526	467	**11,475**
21-24	39,086	1,506	750	221	1,817	1,951	**45,331**
25-34	95,563	3,157	2,017	785	3,825	4,890	**110,237**
35-44	66,246	1,407	1,119	363	2,429	2,740	**74,304**
45-54	38,641	601	486	178	1,406	1,501	**42,813**
55-64	24,884	332	257	106	1,066	942	**27,587**
65-74	13,086	117	98	30	834	503	**14,668**
75 & over	5,186	28	15	5	576	234	**6,044**
Unknown	1,158	170	27	33	252	18,615	**20,255**
Total	**328,260**	**8,711**	**5,234**	**1,846**	**14,839**	**33,592**	**392,482**

* Includes bicyclists, drivers of all-terrain vehicles, etc.

Alcohol involvement in accidents by age show that approximately 3.4% of drivers 16 to 20 years had been drinking. This increased in the 21 to 24 and 25 to 34 year old age groups to 5.4%. The percentages decrease from these groups to a low of .7% in the 75 and over age group.

Table 2.7 Recorded Occurrence of Alcohol in Drivers Killed 1990*

Recorded Occurrence	Drivers Number	Drivers %
Apparently Normal	349	64.5
Had Been Drinking	36	6.7
Alcohol over .08	152	28.1
Ability Impaired Alcohol	4	0.8
Total	**541**	**100.0**

* Excludes cases where alcohol usage was unknown and cases where driver condition was other than normal or alcohol-involved.

Alcohol was involved in 35.6 % of the 541 drivers killed in 1990 for whom alcohol use was recorded. This table shows fewer fatally injured drivers were recorded as had been drinking, while a higher number were legally impaired.

Figure 2.6 Per Cent Driver Condition in Personal Injury Accidents 1981 - 1990

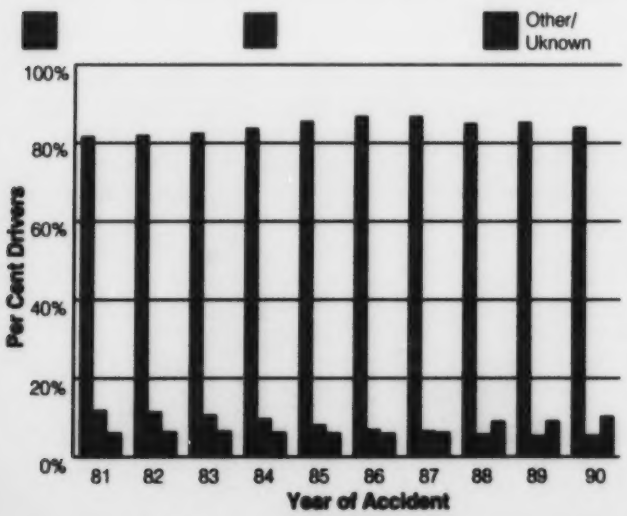


Figure 2.7 Per Cent Recorded Alcohol Occurrence in Drivers Killed 1981 - 1990

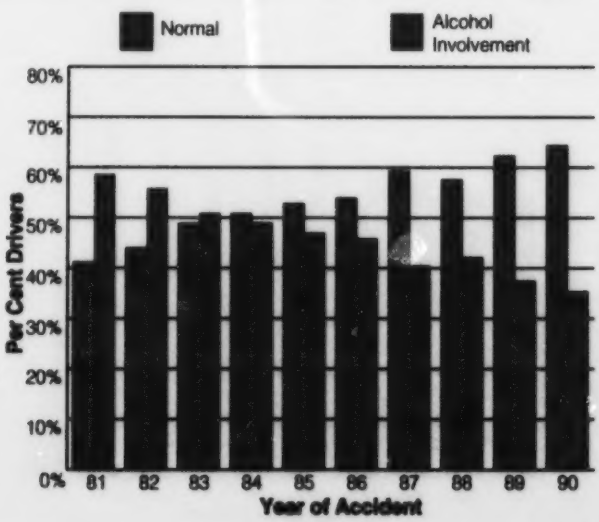


Table 2.8 Apparent Driver Action by Class of Accident 1990

Apparent Driver Action	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
Driving Properly	694	56,855	119,470	**177,019**
Following Too Close	11	9,286	17,961	**27,258**
Speed Too Fast	155	2,023	2,398	**4,576**
Speed Too Fast for Conditions	110	8,221	17,638	**25,969**
Speed Too Slow	-	106	225	**331**
Improper Turn	29	4,212	13,415	**17,656**
Disobey Traffic Control	87	5,443	7,621	**13,151**
Fail to Yield Right of Way	118	11,839	27,658	**39,615**
Improper Passing	30	1,135	3,765	**4,930**
Lost Control	186	9,062	19,710	**28,958**
Wrong Way on One Way Road	3	160	249	**412**
Improper Lane Change	16	2,201	9,831	**12,048**
Other*	138	8,347	17,756	**26,241**
Unknown	61	3,003	11,254	**14,318**
Total	**1,638**	**121,893**	**268,951**	**392,482**

*Includes actions defined as careless driving, inattentive driving, fell asleep, hit and run, wrong side of road, improper parking, impaired, illegally parked, dangerous driving, inexperience, etc.

In 1990, 45.1% of drivers involved in all accidents were driving properly. The most common error identified in all accidents was fail to yield right of way (10.1%) followed by speeding (7.8%), lost control (7.4%) and follow too close (6.9%).

In fatal accidents, 42.4% of drivers were judged to be driving properly. The most common driver error in fatal accidents was speeding (16.2%). This was followed by lost control (11.4%) and fail to yield right way (7.2%).

Table 2.9 Seat Belt Usage by Severity of Driver Injury in Fatal and Personal Injury Accidents 1990

Safety Equipment Used	Severity of Injury					
	Killed	Major	Minor	Minimal	Not Injured	Total
Seat Belt Used	243	2,265	16,713	28,793	48,529	**96,543**
Other Equipment*	1	16	52	48	20	**137**
Equipment Not Used	230	818	1,938	1,543	1,365	**5,894**
No Safety Equipment	-	7	68	95	163	**333**
Use Unknown	66	375	1,176	1,166	8,556	**11,339**
Total	**540**	**3,481**	**19,947**	**31,645**	**58,633**	**114,246**

* Other equipment includes helmets, including construction, motorcycle helmets, etc. worn in a motor vehicle. It also includes the use of airbags. Seat belt usage in conjunction with airbag deployment is unknown.

The tables above and below only include seat belt usage in accidents in which there were personal injuries or fatalities. Property damage only accidents are excluded. ORSARs published prior to 1988, Tables 2.9 and 2.10 included seat belt usage in all accidents.

Commentary for Tables 2.10, 2.11 and 2.12

A large number of young children are transported in child safety seats; therefore more will be killed or injured in these restraint systems. This does not mean that child safety seats are not effective. Some collisions are not survivable. Used correctly, child restraints are the simplest and one of the most effective means of protecting children in an accident.

It is also known from observational surveys that many child safety seats are not used correctly. This is not clear in these tables since children are often removed from the child safety seats before the police officer arrives on the scene. Both correct installation of the seats according to the manufacturer's instructions and adequate securement of the child are important for protection. Eight of the children listed as killed in 1990 in Table 2.11 were ejected from the vehicle, totally unprotected.

Table 2.10 Seat Belt Usage by Severity of Passenger Injury in Fatal and Personal Injury Accidents 1990

Safety Equipment Used	Severity of Injury					
	Killed	Major	Minor	Minimal	Not Injured	Total
Seat Belt Used	131	1,314	9,485	14,823	25,043	**50,796**
Child Safety Seat Used Incorrectly	1	2	16	23	71	**113**
Child Safety Seat Used Correctly	5	17	204	370	1,873	**2,469**
Other Equipment*	1	2	21	18	38	**80**
Equipment Not Used	138	637	1,923	1,589	1,364	**5,651**
No Safety Equipment	10	113	577	735	1,600	**3,035**
Use Unknown	36	222	805	821	6,792	**8,676**
Total	**322**	**2,307**	**13,031**	**18,379**	**36,781**	**70,820**

Table 2.11 Restraint Use for Children (0 - 4 Years) Killed In Accidents 1988-1990

Year	Child Restraint Used Correctly	Child Restraint Used Incorrectly	Lap/Lap & Shoulder Belt	Restraint Not Available	Available Not Used	Use Unknown	Total
1988	2	-	8	1	-	1	**12**
1989	6	2	3	2	-	5	**18**
1990	5	1	7	-	3	4	**20**

Table 2.12 Restraint Use for Children (0 - 4 Years) Involved in Fatal and Personal Injury Accidents by Severity of Injury 1990

Restraint Used	Injury Level		
	Major / Fatal %	Minimal/Minor %	No Injuries %
Child Restraint Used Correctly	18.6	35.0	44.6
Child Restraint Used Incorrectly	2.7	2.3	1.5
Lap /Lap-Shoulder Belt	36.3	46.8	46.1
Not Available	6.2	5.3	3.0
Available/Not Used	25.7	7.3	2.0
Other	1.6	0.3	0.3
Unknown	8.9	3.0	2.5
Total	**100.0**	**100.0**	**100.0**

Note: Commentary for Tables 2.11 and 2.12 is on pg. 14.

Table 2.13 Pedestrian Condition by Severity of Injury 1990

Condition of Pedestrian	Killed	Injured
Normal	74	3,986
Had Been Drinking	7	386
Ability Impaired Alcohol over .08	26	23
Ability Impaired Alcohol	4	139
Ability Impaired Drugs	-	13
Fatigue	1	2
Medical or Physical Defect	3	90
Inattentive	14	678
Other	2	80
Unknown	23	442
Total	**154**	**5,839**

A condition of normal was recorded for 48% of pedestrians who had been killed, and 68.3% of those injured. Pedestrians who had been drinking accounted for 24% of all pedestrians killed, and 9.4% of pedestrians who were injured. Inattention was reported for 9.1% of pedestrian fatalities and 11.6% of pedestrian injuries.

Table 2.14 Apparent Pedestrian Action by Severity of Injury 1990

Apparent Pedestrian Action	Killed	Injured
Crossing Intersection With Right of Way	13	1,336
Crossing Intersection Without Right of Way	18	935
Crossing Intersection No Traffic Control	32	598
Crossing Pedestrian Crossover	3	174
Crossing Marked Crosswalk without Right of Way	4	131
Walking on Roadway With Traffic	10	161
Walking on Roadway Against Traffic	9	79
On Sidewalk or Shoulder	14	385
Playing or Working on Highway	2	95
Coming from Behind Parked Vehicle or Object	4	322
Running onto Roadway	16	836
Getting On/Off School Bus*	2	11
Getting On/Off Vehicle	3	98
Pushing/Working on Vehicle	-	41
Other	24	637
Unknown	-	-
Total	**154**	**5,839**

* Calendar Year

Over half (54.4%) of all pedestrian injuries and 45.5% of pedestrian fatalities occurred in crossing actions, with crossing intersection without right of way being the most significant type for injuries (16.0%) and crossing an intersection with no traffic control being the most significant (20.1%) for fatalities. Running onto roadway is another significant action in pedestrian injuries, (14.3%), and fatalities (10.4%).

2b. putting the people in context

Table 2.15 Category of Persons Killed and Injured 1981-1990

Year	Ontario Population (Est.)	Category of Persons								Persons Killed in All Classes		Persons Injured in All Classes	
		Driver		Passenger*		Pedestrian		All Others			Rate Per		Rate Per
		Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Number	100,000	Number	100,000
1981	8,625,000	657	50,574	393	34,450	237	6,344	158	8,953	1,445	16.8	100,321	1,163.1
1982	8,715,000	487	45,409	296	31,588	179	5,981	176	9,837	1,138	13.1	92,815	1,065.0
1983	8,816,000	528	45,440	302	30,283	204	5,618	170	10,365	1,204	13.7	91,706	1,040.2
1984	9,024,000	460	48,674	282	31,865	189	5,767	201	10,924	1,132	12.5	97,230	1,077.5
1985	9,066,000	502	55,859	333	35,717	182	6,099	174	11,494	1,191	13.1	109,169	1,204.2
1986	9,181,900	511	57,233	289	34,915	153	5,781	149	10,910	1,102	12.0	108,839	1,185.4
1987	9,270,700	545	64,588	318	39,596	187	5,939	179	10,966	1,229	13.3	121,089	1,306.2
1988	9,439,600	563	63,339	350	39,157	186	6,344	138	9,318	1,237	13.1	118,158	1,251.7
1989	9,598,600	627	66,334	369	39,950	161	6,187	129	8,181	1,286	13.4	120,652	1,257.0
1990	9,743,300	540	55,073	321	33,606	154	5,839	105	7,057	1,120	11.5	101,575	1,042.5

* Excludes Motorcycle passengers, which are included with "All Others".

The number of people killed in motor vehicle accidents (1,120) is the lowest since 1986. The number of injuries has decreased to 101,575. The injury rate per 100,000 people also decreased in 1990.

These decreases are consistent with the decreases in accidents and in the estimated kilometres travelled in 1990 compared to the previous years.

Table 2.16 Sex of Driver Population by Age Groups 1990

Sex of Driver	Age Groups							Total
	16-19	20-24	25-34	35-44	45-54	55-64	65+	
Male	179,603	344,386	893,467	775,354	531,734	423,110	396,566	3,544,220
Female	142,939	285,092	773,007	692,345	433,191	305,270	272,819	2,904,663
Total	**322,542**	**629,478**	**1,666,474**	**1,467,699**	**964,925**	**728,380**	**669,385**	**6,448,883**

Table 2.17 Driver Population Age Groups 1981-1990

Year	Age Groups							Total
	16-19	20-24	25-34	35-44	45-54	55-64	65+	
1981	354,492	659,144	1,313,592	990,806	771,931	604,892	428,320	5,123,177
1982	342,136	670,118	1,326,974	1,051,422	779,235	628,131	447,182	5,247,198
1983	320,478	682,033	1,359,350	1,103,403	792,933	650,687	471,375	5,380,259
1984	300,364	689,476	1,396,560	1,155,421	806,207	671,271	494,612	5,513,911
1985	293,908	687,467	1,443,327	1,205,614	820,397	685,640	524,069	5,660,422
1986	295,107	676,283	1,494,658	1,257,724	840,322	697,254	556,451	5,817,799
1987	305,886	662,357	1,544,926	1,306,853	866,022	708,865	583,196	5,978,105
1988	310,764	643,691	1,588,516	1,353,841	898,103	714,266	608,931	6,118,112
1989	323,109	631,470	1,634,187	1,409,053	931,991	720,788	639,826	6,290,424
1990	322,542	629,478	1,666,474	1,467,699	964,925	728,380	669,385	6,448,883

The number of drivers and the average driver age continues to increase.

The number of drivers increased by 2.5%. The 16-19 and 20-24 year age groups decreased from the previous year. The decrease in the 20-24 year age category, has continued from 1985.

Males continue to outnumber females by a 10 to 1 ratio in all driver's licence categories associated with commercial and professional driving except Class B and E which are school buses.

Table 2.18 Driver Licence Class by Sex 1990

Licence Class	Driver Sex				Total	%
	Male	%	Female	%		
A	79,176	2.23	904	0.03	80,080	1.24
AM	26,699	.75	136	0.00	26,835	0.41
AB	3,660	0.10	259	0.00	3,919	0.06
AC	10,840	0.30	172	0.00	11,012	0.17
ABM	1,824	0.05	91	0.00	1,915	0.02
ACM	5,232	0.14	39	0.00	5,271	0.08
B	17,632	0.49	16,758	0.57	34,390	0.53
BM	4,597	0.12	876	0.03	5,473	0.08
C	8,391	0.23	515	0.01	8,906	0.13
CM	2,210	0.06	54	0.00	2,264	0.03
D	191,627	5.40	7,450	0.25	199,077	3.08
DM	42,688	1.20	482	0.01	43,170	0.66
DE	107	0.00	19	0.00	126	0.00
DF	2,239	0.06	81	0.00	2,320	0.03
DEM	17	0.00	0	0.00	17	0.00
DFM	970	0.02	13	0.00	983	0.01
E	1,480	0.04	2,849	0.09	4,329	0.06
EM	189	0.00	72	0.00	261	0.00
F	8,496	0.23	5,305	0.18	13,801	0.21
FM	2,258	0.06	315	0.01	2,573	0.03
G	2,801,298	79.03	2,822,368	97.16	5,623,666	87.20
GM	328,428	9.26	45,297	1.55	373,725	5.79
M	4,162	0.11	608	0.02	4,770	0.07
Total	3,544,220	54.95	2,904,663	45.04	6,448,883	100.00

Table 2.19 Licensed Drivers, Total Accidents, Persons Killed and Injured 1931-1990

Year	Licensed Drivers	Total Accidents	Persons Killed	Persons Injured
1931	666,266	9,241	571	8,494
1932	648,710	9,171	502	8,231
1933	638,710	8,634	403	7,877
1934	665,743	9,645	512	8,990
1935	707,457	10,648	560	9,829
1936	755,765	11,388	546	10,251
1937	802,765	13,906	766	12,092
1938	86[illegible]729	13,715	640	11,683
1939	899,572	13,710	652	11,638
1940	937,551	16,921	716	13,715
1941	986,773	18,167	801	14,275
1942	961,883	13,490	567	10,205
1943	919,457	11,025	549	8,628
1944	905,650	11,004	498	8,373
1945	971,852	13,458	598	9,804
1946	1,087,445	17,356	688	12,228
1947	1,144,291	22,293	734	13,056
1948	1,209,408	27,406	740	14,970
1949	1,278,584	34,472	830	17,469
1950	1,366,388	43,681	791	19,940
1951	1,461,538	54,920	949	22,557
1952	1,556,559	58,515	1,010	23,643
1953	1,656,259	65,866	1,082	24,353
1954	1,747,567	62,509	1,045	24,607
1955	1,856,845	63,219	1,111	26,246
1956	1,967,789	71,399	1,180	28,626
1957	2,088,551	76,302	1,279	30,414
1958	2,176,417	76,884	1,112	30,106
1959	2,270,246	81,518	1,187	31,602
1960	2,355,567	87,186	1,166	34,436
1961	2,414,615	85,577	1,268	37,146
1962	2,469,425	94,231	1,383	41,766
1963	2,555,015	104,919	1,421	47,801
1964	2,694,023	111,232	1,424	54,560
1965	2,739,138	128,462	1,611	60,917
1966	2,821,648	139,781	1,596	65,210
1967	3,004,654	145,008	1,719	67,280
1968	3,128,509	155,127	1,586	71,520
1969	3,247,979	169,395	1,683	74,902
1970	3,422,892	141,609	1,535	75,126
1971	3,563,197	158,831	1,769	84,650
1972	3,688,541	189,494	1,934	95,181
1973	3,841,628	193,021	1,959	97,[illegible]90
1974	3,972,980	204,271	1,748	98,673
1975	4,160,623	213,689	1,800	97,034
1976	4,315,925	211,865	1,511	83,736
1977	4,562,903	218,567	1,420	95,664
1978	4,725,546	286,363	1,450	94,979

(Cont'd)

Table 2.19 Licensed Drivers, Total Accidents, Persons Killed and Injured Continued

Year	Licensed Drivers	Total Accidents	Persons Killed	Persons Injured
1979	4,856,351	197,196	1,560	101,321
1980	4,993,531	196,501	1,508	101,367
1981	5,123,177	198,372	1,445	100,321
1982	5,247,198	187,943	1,138	92,815
1983	5,380,259	181,999	1,204	91,706
1984	5,513,911	194,782	1,132	97,230
1985	5,660,422	189,750	1,191	109,169
1986	5,817,799	187,286	1,102	108,839
1987	5,978,105	203,431	1,229	121,089
1988	6,118,112	228,398	1,237	118,158
1989	6,290,424	247,038	1,286	120,652
1990	6,448,883	220,188	1,120	101,575

Table 2.20 Original Licences Issued 1986-1990

Year	Original Licences
1986	231,697
1987	257,372
1988	255,211
1989	279,814
1990	267,894

Table 2.21 Temporary Licence Permits Issued for Class L's and Class R's 1986 - 1990

Year	Licence Permits	
	L	R
1986	369,626	42,032
1987	348,866	38,426
1988	307,748	31,098
1989	320,921	27,167
1990	301,569	24,828

Table 2.22 **Driver Age Groups - Number Licensed, Accident Involvement and Per Cent Involved in Accidents 1990**

Drivers Age	Drivers Licensed			Drivers Involved in Accidents *			% of Drivers of Each Age Involved in Accidents		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 16	-	-	-	416	118	**534**	-	-	-
16	21,167	15,634	**36,801**	4,131	2,092	**6,223**	19.5	13.4	**16.9**
17	44,433	35,294	**79,727**	6,261	3,088	**9,349**	14.1	8.7	**11.7**
18	53,583	42,737	**96,320**	7,135	3,170	**10,305**	13.3	7.4	**10.7**
19	60,420	49,274	**109,694**	7,746	3,349	**11,095**	12.8	6.8	**10.1**
20	65,318	53,392	**118,710**	8,003	3,327	**11,330**	12.2	6.2	**9.5**
21-24	279,068	231,700	**510,768**	31,818	12,959	**44,777**	11.4	5.6	**8.8**
25-34	893,467	773,007	**1,666,474**	76,967	32,097	**109,064**	8.6	4.2	**6.5**
35-44	775,354	692,345	**1,467,699**	48,966	24,626	**73,592**	6.3	3.6	**5.0**
45-54	531,734	433,191	**964,925**	29,810	12,630	**42,440**	5.6	2.9	**4.4**
55-64	423,110	305,270	**728,380**	20,148	7,180	**27,328**	4.8	2.4	**3.8**
65-74	283,570	206,432	**490,002**	10,144	4,436	**14,580**	3.6	2.1	**3.0**
75 & Over	112,996	66,387	**179,383**	4,377	1,630	**6,007**	3.9	2.4	**3.3**
Unknown	-	-	-	-	-	**19,615**	-	-	-
Total	**3,544,220**	**2,904,663**	**6,448,883**	**255,922**	**110,702**	**386,239**	**7.2**	**3.8**	**6.0**

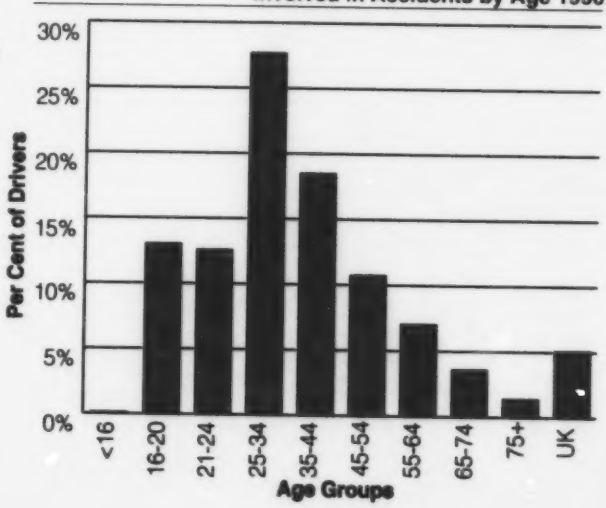
* This table excludes drivers of non motor vehicles, i.e. bicyclists, snow vehicle operators, etc.

Young inexperienced drivers continue to be over-involved in accidents. Of 16 year old drivers, 1 in 6 was involved in an accident. Drivers 16 to 24 were 14.8% of registered drivers but were 25.3% of drivers in accidents.

There was an increase of 2.5% in licensed drivers, with an increase of 6.2% in drivers age 75 and over.

While male drivers continue to be in accidents two to three more times than females in the same age groups, the number of accidents decreased by about 10% among both sexes and all age groups except for females age 75 and over who experienced a 2% increase.

Figure 2.8 **Per Cent of Licensed Drivers Involved in Accidents by Age 1990**



3 the accident

In 1990 there were 220,188 reportable motor vehicle accidents in Ontario. Of these, 153,317 involved only property damage. There were 65,912 accidents in which there were 101,575 persons injured. Of all the injuries, 7.4% were considered major, 38.2% were minor and the remaining 54.4% were minimal. There were 1,120 fatalities in 959 fatal accidents.

The estimated million kilometres travel decreased by 4.6% to 73,341 in 1990. The accident rate decreased to 3.0 per million kilometres travelled from 3.2.

The decreases in the estimates of the distance travelled and the accident rates may be the result of the recession during this period. A downturn in the economy results in fewer people on the road and fewer discretionary kilometres driven. As the economy rebounds over the next few years it can be expected that the accident rate would begin to rise to post recessionary levels.

3a. types of accidents

Table 3.1 Class of Accident 1981-1990

Year	Class of Accident			Total
		Personal	Property	
	Fatal	Injury	Damage	
1981	1,234	67,292	129,846	**198,372**
1982	997	62,956	123,990	**187,943**
1983	1,042	62,735	118,222	**181,999**
1984	1,011	66,101	127,670	**194,782**
1985	1,036	73,840	114,874	**189,750**
1986	951	73,703	112,632	**187,286**
1987	1,085	80,432	121,914	**203,431**
1988	1,076	76,724	150,598	**228,398**
1989	1,106	77,852	168,080	**247,038**
1990	959	65,912	153,317	**220,188**

The total number of accidents decreased in 1990. Fatal accidents were down 13.3%, personal injury accidents were down 15.3% and property damage accidents were down 8.9%.

Table 3.2 Accident Rate Per One Million Kilometres Travelled 1981-1990

Year	Accident Rate
1981	2.8
1982	2.9
1983	2.8
1984	2.9
1985	2.8
1986	2.7
1987	2.8
1988	3.2
1989	3.2
1990	3.0

Table 3.3 Motor Vehicles Involved in Accidents Based on Initial Impact 1990*

Motor Vehicle In Accident Involving Moveable Objects:	Class of Accident Fatal	Personal Injury	Property Damage	Total
Other Motor Vehicle/s	1,013	93,880	224,070	**318,963**
Unattended Vehicles	9	1,105	15,259	**16,373**
Pedestrian	145	5,292	84	**5,521**
Cyclist	25	3,660	321	**4,006**
Railway Train	12	38	73	**123**
Street Car	-	74	324	**398**
Farm Tractor	2	46	133	**181**
Animal Domestic	1	107	429	**537**
Animal Wild	2	306	4,804	**5,112**
Other Moveable Objects	4	53	216	**273**
Sub-total	**1,213**	**104,561**	**245,713**	**351,487**
Fixed Objects:				
Cable Guide Rail	3	132	500	**635**
Concrete Guide Rail	3	202	413	**618**
Steel Guide Rail	2	405	1,219	**1,626**
Pole (Utility Tower)	4	596	1,690	**2,290**
Pole (Sign/Parking Meter)	5	179	864	**1,048**
Fence/Noise Barrier	-	58	283	**341**
Culvert	2	45	48	**95**
Bridge Support	-	55	151	**206**
Rock Face	-	42	65	**107**
Snow Bank or Drift	2	91	264	**357**
Ditch	13	512	768	**1,293**
Curb	24	863	1,971	**2,858**
Crash Cushion	1	19	34	**54**
Building or Wall	-	57	186	**243**
Water Course	-	2	7	**9**
Construction Marker	1	20	71	**92**
Tree, Shrub or Stump	3	197	481	**681**
Other Fixed Object	9	331	1,385	**1,725**
Sub-total	**72**	**3,906**	**10,400**	**14,278**
Other Events				
Ran Off Road	178	5,437	8,783	**14,398**
Skidding/Sliding	131	6,454	13,760	**20,345**
Jackknifing	-	32	159	**191**
Load Spill	3	11	83	**97**
Fire/Explosion	-	16	510	**526**
Submersion	-	2	2	**4**
Rollover	11	491	427	**929**
Debris on Road	3	118	484	**605**
Debris off Vehicle	7	128	665	**800**
Other Non-Collision Event	40	2,612	4,959	**7,611**
Sub-total	**373**	**15,301**	**29,832**	**45,906**
Total	**1,658**	**123,868**	**285,945**	**411,271**

Table 3.4 Initial Impact Type by Class of Accident 1990

Initial Impact Type	Class of Accident Fatal	Personal Injury	Property Damage	Total
Approaching	210	2,248	3,024	**5,482**
Angle	125	8,462	16,188	**24,775**
Rear End	48	17,251	28,954	**46,253**
Sideswipe	41	3,271	16,163	**19,475**
Turning Movement	70	13,000	34,529	**47,599**
Single Motor Vehicle Unattended	7	992	15,143	**16,142**
Single Motor Vehicle Other	456	20,515	37,052	**58,023**
Other	2	169	2,257	**2,428**
Unknown	-	4	7	**11**
Total	**959**	**65,912**	**153,317**	**220,188**

Of all vehicles in accidents 85.5% impacted movable objects. Fixed objects accounted for 3.5% and the remaining 11% involved other events such as skidding, jackknifing, rollover etc.

* Table 3.3 now reflects the number of motor vehicles involved in accidents by initial impact.

3b time and environment

Table 3.5 Month of Occurrence by Class of Accident 1990

Month of Occurrence	Class of Accident						Total	%
	Fatal	%	Personal Injury	%	Property Damage	%		
January	76	7.9	5,422	8.2	14,814	9.7	**20,312**	**9.2**
February	66	6.9	5,246	8.0	14,564	9.5	**19,876**	**9.0**
March	49	5.1	4,824	7.3	11,566	7.5	**16,439**	**7.5**
April	73	7.6	4,609	7.0	9,869	6.4	**14,551**	**6.6**
May	79	8.2	5,710	8.7	11,407	7.4	**17,196**	**7.8**
June	82	8.6	6,337	9.6	11,968	7.8	**18,387**	**8.4**
July	107	11.2	5,973	9.1	11,400	7.4	**17,480**	**7.9**
August	100	10.4	5,987	9.1	11,535	7.5	**17,622**	**8.0**
September	94	9.8	5,597	8.5	11,912	7.8	**17,603**	**8.0**
October	95	9.9	5,492	8.3	12,957	8.5	**18,544**	**8.4**
November	65	6.8	5,401	8.2	14,592	9.5	**20,058**	**9.1**
December	73	7.6	5,314	8.1	16,733	10.9	**22,120**	**10.0**
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

The summer months remain the worst for fatal and personal injury accidents. The greatest number of property damage accidents occur with the onset of winter.

There are a number of reasons for these results. The incidence of drinking and driving are higher in the summer months. Weather conditions in the winter generate more property damage accidents, and it is more likely to be dark when driving home from work during the winter months.

Table 3.6 Day of Week by Class of Accident 1990

Day of Occurrence	Class of Accident						Total	%
	Fatal	%	Personal Injury	%	Property Damage	%		
Sunday	145	15.1	7,590	11.5	16,528	10.8	**24,263**	**11.0**
Monday	115	12.0	9,388	14.2	22,871	14.9	**32,374**	**14.7**
Tuesday	113	11.8	8,827	13.4	20,748	13.5	**29,688**	**13.5**
Wednesday	120	12.5	8,609	13.1	20,277	13.2	**29,006**	**13.2**
Thursday	136	14.2	9,789	14.8	23,452	15.3	**33,377**	**15.2**
Friday	154	16.0	12,149	18.4	28,148	18.4	**40,451**	**18.4**
Saturday	176	18.4	9,560	14.5	21,293	13.9	**31,029**	**14.1**
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

The largest proportion of accidents occur on the weekends with the largest number being on Fridays. A similar pattern is seen with fatal accidents.

People tend to drive later at night on the weekend as well as driving less familiar routes. The incidence of alcohol and driving is also higher during this period.

Table 3.7 Hour of Occurrence by Class of Accident 1990

Hour of Occurrence A.M.	Class of Accident						Total	%
	Fatal	%	Personal Injury	%	Property Damage	%		
12 to 1 a.m.	33	3.4	1,331	2.0	3,125	2.0	4,489	2.0
1 to 2 a.m.	53	5.5	1,686	2.5	3,303	2.1	5,042	2.2
2 to 3 a.m.	39	4.0	1,049	1.5	2,381	1.5	3,469	1.5
3 to 4 a.m.	21	2.1	625	0.9	1,468	0.9	2,114	0.9
4 to 5 a.m.	17	1.7	467	0.7	1,061	0.6	1,545	0.7
5 to 6 a.m.	19	1.9	471	0.7	1,285	0.8	1,775	0.8
Sub total	**182**	**18.9**	**5,629**	**8.5**	**12,623**	**8.2**	**18,434**	**8.3**
6 to 7 a.m.	23	2.3	1,405	2.1	3,421	2.2	4,849	2.2
7 to 8 a.m.	35	3.6	2,710	4.1	6,597	4.3	9,342	4.2
8 to 9 a.m.	34	3.5	3,818	5.7	9,405	6.1	13,257	6.0
9 to 10 a.m.	35	3.6	2,547	3.8	6,749	4.4	9,331	4.2
10 to 11 a.m.	45	4.6	2,575	3.9	6,875	4.4	9,495	4.3
11 to 12 noon	36	3.7	3,258	4.9	8,063	5.2	11,357	5.1
Sub total	**208**	**21.6**	**16,313**	**24.7**	**41,110**	**26.8**	**57,631**	**26.1**
Hour of Occurrence P.M.								
12 to 1 p.m.	45	4.6	3,768	5.7	8,954	5.8	12,767	5.7
1 to 2 p.m.	41	4.2	3,615	5.4	8,622	5.6	12,278	5.5
2 to 3 p.m.	37	3.8	3,857	5.8	8,942	5.8	12,836	5.8
3 to 4 p.m.	51	5.3	5,115	7.7	11,485	7.4	16,651	7.5
4 to 5 p.m.	55	5.7	5,773	8.7	12,779	8.3	18,607	8.4
5 to 6 p.m.	56	5.8	5,287	8.0	11,511	7.5	16,854	7.6
Sub total	**285**	**29.7**	**27,415**	**41.5**	**62,293**	**40.6**	**89,993**	**40.8**
6 to 7 p.m.	41	4.2	4,071	6.1	8,749	5.7	12,861	5.8
7 to 8 p.m.	57	5.9	3,374	5.1	7,158	4.6	10,589	4.8
8 to 9 p.m.	41	4.2	2,561	3.8	5,611	3.6	8,213	3.7
9 to 10 p.m.	44	4.5	2,384	3.6	5,263	3.4	7,691	3.4
10 to 11 p.m.	52	5.4	2,075	3.1	4,375	2.8	6,502	2.9
11 to 12 midnight	45	4.6	1,895	2.8	4,277	2.7	6,217	2.8
Sub total	**280**	**29.1**	**16,360**	**24.8**	**35,433**	**23.1**	**52,073**	**23.6**
Unknown	4	0.4	195	0.2	1,858	1.2	2,057	0.9
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

As would be expected, accidents occurred with the greatest frequency during the peak morning and afternoon commuting periods.

Fatal accidents are disproportionately frequent during the late night and early morning particularly from 10 pm. to 6 am.

Table 3.8 Statutory Holidays, Holiday Weekends - Fatal Accidents, Persons Killed and Injured 1990

Statutory Holiday	Number of Fatal Accidents	Drivers		Passengers		Others		Total	
		Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Easter Weekend	16	12	12	5	24	1	-	18	36
Victoria Day	8	4	8	7	8	2	-	13	16
Canada Day	20	14	10	12	37	2	-	28	47
Civic Holiday (Simcoe Day)	12	9	8	13	11	-	-	22	19
Labour Day	18	12	10	14	19	2	-	28	29
Thanksgiving Day	12	5	7	4	9	3	-	12	16
Christmas/Boxing Day	5	2	8	3	7	1	-	6	10

Figure 3.1 Light Condition by Class of Accident 1990

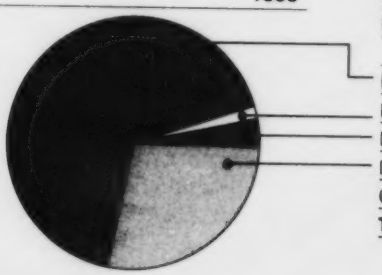


Table 3.9 Light Condition by Class of Accident 1990

Light Condition	Class of Accident						Total	%
	Fatal	%	Personal Injury	%	Property Damage	%		
Daylight	510	53.2	44,757	67.9	101,711	66.3	146,978	66.8
Dawn	14	1.5	1,053	1.6	2,696	1.8	3,763	1.7
Dusk	30	3.1	2,386	3.6	5,806	3.8	8,222	3.7
Darkness	404	42.1	17,706	26.9	42,924	28.0	61,034	27.7
Other	1	0.1	10	0.0	180	0.1	191	0.1
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

Figure 3.2 Visibility by Class of Accidents 1990

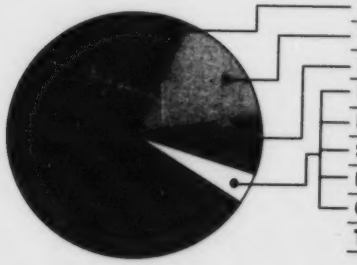


Table 3.10 Visibility by Class of Accident 1990

Visibility	Class of Accident						Total	%
	Fatal	%	Personal Injury	%	Property Damage	%		
Clear	758	79.0	49,220	74.7	109,747	71.6	159,725	72.5
Rain	99	10.3	10,318	15.6	24,051	15.7	34,468	15.6
Snow	47	4.9	4,012	6.1	13,282	8.7	17,341	7.9
Freezing Rain	5	0.5	652	1.0	2,193	1.4	2,850	1.3
Drifting Snow	5	0.5	362	0.5	1,151	0.7	1,518	0.7
Strong Wind	2	0.2	147	0.2	341	0.2	490	0.2
Fog, Mist, Smoke or Dust	33	3.4	1,134	1.7	2,309	1.5	3,476	1.6
Other	10	1.0	67	0.1	243	0.2	320	0.1
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

3c. the accident location

Table 3.11 Road Jurisdiction by Class of Accident 1990

Road Jurisdiction	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
Municipal (Excl. Twp. Rd.)	216	33,374	83,628	**117,218**
Provincial Highway	411	13,978	29,124	**43,513**
Township	78	3,284	7,322	**10,684**
County or District	85	2,827	5,670	**8,582**
Regional Municipality	158	12,116	26,730	**39,004**
Federal	11	232	670	**913**
Other	-	101	173	**274**
Total	**959**	**65,912**	**153,317**	**220,188**

Table 3.12 Road Jurisdiction for All Accidents 1981-1990

Road Jurisdiction	Year										Total
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Municipal	135,346	126,876	119,230	136,456	128,809	120,799	135,949	159,228	139,926	117,218	**1,319,837**
Provincial	35,584	33,246	32,667	36,110	38,976	38,002	40,825	44,772	48,944	43,513	**392,639**
Township	11,573	11,476	11,330	11,628	10,562	10,092	10,460	12,277	11,882	10,684	**111,964**
County or District	6,475	5,669	5,258	6,248	7,002	7,027	7,024	7,527	8,773	8,582	**69,585**
Regional Municipality	8,220	9,722	12,592	3,393	3,166	10,185	7,863	3,620	36,237*	39,004	**134,002**
Federal**	-	-	-	-	-	-	-	748	940	913	**2,601**
Other	1,174	954	922	947	1,235	1,181	1,310	226	336	274	**8,559**
Total	**198,372**	**187,943**	**181,999**	**194,782**	**189,750**	**187,286**	**203,431**	**228,398**	**247,038**	**220,188**	**2,039,187**

*Some accidents occurring on regional municipal roads were recorded as occurring on municipal roads prior to 1989.

**Since January 1, 1988 the accident report form allows the recording of jurisdiction for federal roads.

Figure 3.3 Road Location by Class of Accident 1990

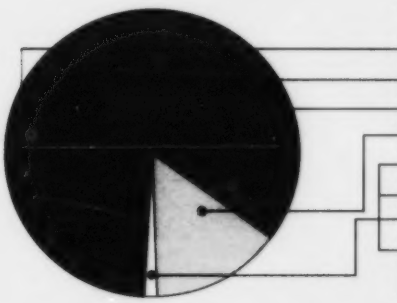


Table 3.13 Road Location by Class of Accident 1990

Road Location	Class of Accident						Total	%
			Personal		Property			
	Fatal	%	Injury	%	Damage	%		
Non-intersection	607	63.3	23,111	35.1	56,630	36.9	**80,348**	**36.5**
Intersection Related	61	6.4	15,771	23.9	37,293	24.3	**53,125**	**24.1**
In Intersection	175	18.2	18,416	27.9	33,268	21.7	**51,859**	**23.6**
At/Near Private Drive	78	8.1	7,819	11.9	24,209	15.8	**32,106**	**14.6**
At Railway	13	1.4	131	0.2	304	0.2	**448**	**0.2**
Underpass or Tunnel	2	0.2	69	0.1	212	0.1	**283**	**0.1**
Overpass or Bridge	21	2.2	447	0.7	1,021	0.7	**1,489**	**0.7**
Other	2	0.2	148	0.2	380	0.2	**530**	**0.2**
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

Figure 3.4 Road Surface Condition by Class of Accident 1990

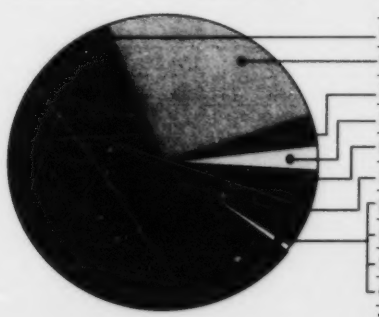


Table 3.14 Road Surface Condition by Class of Accident 1990

Road Surface Condition	Class of Accident						Total	%
			Personal		Property			
	Fatal	%	Injury	%	Damage	%		
Dry	649	67.7	40,896	62.0	87,733	57.2	**129,278**	**58.7**
Wet	199	20.8	17,080	25.9	39,269	25.6	**56,548**	**25.7**
Loose Snow	24	2.5	1,594	2.4	5,581	3.6	**7,199**	**3.3**
Slush	27	2.8	1,477	2.2	4,630	3.0	**6,134**	**2.8**
Packed Snow	15	1.6	1,130	1.7	4,613	3.0	**5,758**	**2.6**
Ice	23	2.4	3,125	4.7	10,223	6.7	**13,371**	**6.1**
Mud	-	-	24	0.0	81	0.1	**105**	**0.0**
Loose Sand or Gravel	11	1.1	479	0.7	913	0.6	**1,403**	**0.6**
Spilled Liquid	-	-	27	0.0	38	0.0	**65**	**0.0**
Other	11	1.1	80	0.1	236	0.2	**327**	**0.1**
Total	**959**	**100.0**	**65,912**	**100.0**	**153,317**	**100.0**	**220,188**	**100.0**

4 place of accident in Ontario

Table 4.1 **Place of Accident - Estimated Population, Class of Accident, Persons Killed, Persons Injured and Vehicle Registrations 1990**

Location		Estimated Population (1988)*	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Persons Injured	Motor Vehicle Registrations
ONTARIO		**9,096,294**	**220,188**	**959**	**65,912**	**153,317**	**1,120**	**101,575**	**6,080,596**
Blind River, t		3,263	30	-	12	18	-	17	
Elliot Lake, t	M	16,229	138	-	36	102	-	45	
Sault Ste. Marie, c	M	78,568	2,096	4	596	1,496	4	898	
Thessalon, t		1,532	10	-	2	8	-	2	
Provincial Highway		-	742	5	272	465	6	436	
Other Areas		17,747	312	2	84	226	2	134	
Algoma		**117,339**	**3,328**	**11**	**1,002**	**2,315**	**12**	**1,532**	**83,409**
Brantford , c	M	75,465	1,246	4	377	865	5	512	
Paris, t	M	7,907	79	-	12	67	-	12	
Provincial Highway		-	391	8	131	252	8	245	
Other Areas		18,713	411	4	147	260	4	246	
Brant		**102,085**	**2,127**	**16**	**667**	**1,444**	**17**	**1,015**	**69,753**
Amabel, twp		3,155	2	-	1	1	-	2	
Brant, twp		3,288	1	-	-	1	-	-	
Chesley, t		1,790	16	-	5	11	-	7	
Culross, twp		1,539	1	-	-	1	-	-	
Kincardine, t	M	5,734	51	-	12	39	-	15	
Port Elgin, t	M	5,909	95	-	28	67	-	42	
Southhampton, t	M	2,695	33	-	13	20	-	15	
Walkerton, t	M	4,687	49	-	7	42	-	7	
Wiarton, t		2,080	15	-	4	11	-	4	
Provincial Highway		-	256	4	92	160	4	168	
Other Areas		26,242	536	4	155	377	4	262	
Bruce		**57,119**	**1,055**	**8**	**317**	**730**	**8**	**522**	**47,457**
Cochrane, t		4,370	59	-	12	47	-	13	
Hearst, t		5,239	62	-	10	52	-	11	
Iroquois Falls, t		5,895	51	-	10	41	-	12	
Kapuskasing, t	M	10,830	114	-	14	100	-	14	
Smooth Rock Falls, t		2,052	10	-	2	8	-	2	
Timmins,c	M	46,065	754	1	197	556	1	310	
Provincial Highway		-	616	7	181	428	8	289	
Other Areas		10,395	240	4	71	165	4	101	
Cochrane		**84,846**	**1,906**	**12**	**497**	**1,397**	**13**	**752**	**58,219**
Orangeville, t	M	15,293	289	-	68	221	-	99	
Shelburne, t	M	3,123	26	-	8	18	-	12	
Provincial Highway		-	265	6	65	194	6	125	
Other Areas		16,036	368	4	120	244	4	198	
Dufferin		**34,452**	**948**	**10**	**261**	**677**	**10**	**434**	**27,151**

Legend t town; c city; vl village; twp township

Other Areas - Jurisdictions with less than 1,500 population

M Municipal Police Force

Table 4.1 Continued

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Injured	Motor Vehicle Registrations
Morrisburg,vl		2,237	20	-	4	16	-	12	
Mountain, twp		3,064	2	-	2	-	-	4	
Williamsburg, twp		3,178	1	-	-	1	-	-	
Winchester, twp		3,083	18	-	6	12	-	10	
Winchester,vl		2,167	4	1	2	1	1	3	
Provincial Highway		-	161	3	63	95	3	121	
Other Areas		5,733	190	2	50	138	2	78	
Dundas		**19,462**	**396**	**6**	**127**	**263**	**6**	**228**	**14,695**
Ajax, t		45,046	524	3	143	378	3	229	
Brock, twp		10,082	110	3	24	83	3	35	
Newcastle, t		37,769	534	3	177	354	3	272	
Oshawa,c		120,904	2,615	3	756	1,856	3	1,229	
Pickering, t		56,132	809	4	190	615	4	279	
Scugog, twp		15,675	181	2	58	121	4	84	
Uxbridge, twp		12,281	206	1	56	149	1	80	
Whitby, t		49,948	1,026	-	308	718	-	484	
Provincial Highway		-	1,672	14	544	1,114	14	915	
Other Areas		-	640	-	186	454	-	263	
Durham	**M**	**347,837**	**8,317**	**33**	**2,442**	**5,842**	**35**	**3,870**	**249,803**
Aldborough, twp		2,546	2	-	-	2	-	-	
Aylmer, t	M	5,457	98	-	20	78	-	27	
Bayham, twp		3,838	1	-	-	1	-	-	
Dunwich, twp		2,025	1	-	-	1	-	-	
Port Stanley,vl		1,826	19	-	8	11	-	8	
St. Thomas,c	M	28,405	442	2	182	258	2	276	
Southwold, twp		4,248	2	-	2	-	-	4	
Yarmouth, twp		7,781	2	-	2	-	-	3	
Provincial Highway		-	342	4	124	214	6	225	
Other Areas		13,048	382	3	133	246	3	210	
Elgin		**69,174**	**1,291**	**9**	**471**	**811**	**11**	**753**	**53,909**
Amherstburg, t	M	8,211	78	-	28	50	-	37	
Anderdon, twp	M	4,992	11	-	5	6	-	5	
Belle River, t		3,764	23	-	11	12	-	16	
Colchester North, twp		3,583	2	-	1	1	-	1	
Colchester South, twp	M	4,815	4	-	2	2	-	2	
Essex, t	M	6,252	59	-	13	46	-	22	
Gosfield North, twp		3,913	1	-	-	1	-	-	
Gosfield South, twp		7,362	1	-	-	1	-	-	
Harrow, t		2,395	28	-	3	25	-	3	
Kingsville, t	M	5,332	33	-	7	26	-	8	
Leamington, t	M	12,764	295	-	57	238	-	72	
Maidstone, twp		8,850	3	-	2	1	-	2	
Malden, twp		3,095	1	-	1	-	-	2	
Mersea, twp	M	8,464	3	-	2	1	-	3	
St.Clair Beach,vl	M	3,367	18	-	5	13	-	6	
Sandwich South, twp		4,943	6	-	1	5	-	2	
Sandwich West, twp	M	14,629	8	-	3	5	-	3	

Table 4.1 **Continued**

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Persons Injured	Motor Vehicle Registrations
Tecumseh, t		8,873	88	-	37	51	-	57	
Windsor,c	M	190,198	4,424	5	1,460	2,959	5	2,213	
Provincial Highway		-	675	6	283	386	7	480	
Other Areas		9,150	979	11	400	568	14	612	
Essex		**314,952**	**6,740**	**22**	**2,321**	**4,397**	**26**	**3,547**	**198,090**
Kingston,c	M	57,382	1,358	2	405	951	2	572	
Kingston, twp		32,774	12	-	2	10	-	4	
Portland, twp		4,173	1	-	1	-	-	2	
Storrington, twp		3,247	1	-	-	1	-	-	
Provincial Highway		-	606	11	214	381	12	384	
Other Areas		21,756	710	3	206	501	3	323	
Frontenac		**119,332**	**2,688**	**16**	**828**	**1,844**	**17**	**1,285**	**81,534**
Alexandria, t	M	3,229	89	-	20	69	-	29	
Charlottenburg, twp		7,004	2	-	-	2	-	-	
Kenyon, twp		3,092	1	-	-	1	-	-	
Lancaster, twp		3,362	4	-	1	3	-	2	
Lochiel, twp		2,932	1	-	-	1	-	-	
Provincial Highway		-	211	5	83	123	6	147	
Other Areas		1,545	196	4	58	134	5	100	
Glengarry		**21,164**	**504**	**9**	**162**	**333**	**11**	**278**	**15,329**
Augusta, twp		6,811	2	-	1	1	-	1	
Cardinal,vl	M	1,578	14	-	1	13	-	1	
Kemptville, t	M	2,491	5	-	1	4	-	2	
Prescott, t	M	4,413	78	-	14	64	-	17	
Provincial Highway		-	269	5	66	198	7	113	
Other Areas		12,737	317	2	75	240	2	111	
Grenville		**28,030**	**685**	**7**	**158**	**520**	**9**	**245**	**21,613**
Collingwood, twp		2,592	4	-	-	4	-	-	
Durham, t	M	2,487	33	-	9	24	-	16	
Hanover, t	M	6,327	79	-	25	54	-	32	
Keppel, twp		2,959	1	-	-	1	-	-	
Meaford, t	M	4,283	40	-	10	30	-	13	
Owen Sound,c	M	19,913	351	1	103	247	1	155	
St. Vincent, twp		1,930	2	-	2	-	-	3	
Sarawak, twp		2,619	1	-	-	1	-	-	
Thornbury, t	M	1,458	11	-	2	9	-	4	
Provincial Highway		-	378	2	119	257	3	215	
Other Areas		30,589	638	8	179	451	8	298	
Grey		**75,157**	**1,538**	**11**	**449**	**1,078**	**12**	**736**	**53,481**
Delhi, twp		14,539	144	2	47	95	2	80	
Dunville, t		11,323	186	1	51	134	1	69	
Haldimand, t		18,211	112	4	28	80	4	52	
Nanticoke,c		20,441	233	4	75	154	4	129	
Norfolk, twp		10,514	48	-	19	29	-	31	
Simcoe, t		14,197	348	-	78	270	-	124	
Provincial Highway		-	392	5	130	257	5	238	
Other Areas		-	448	8	150	290	8	224	
Haldimand-Norfolk M		**89,225**	**1,911**	**24**	**578**	**1,309**	**24**	**947**	**73,569**

Table 4.1 Continued

Location		Estimated Population* (1988)	Class of Accident: Total Accidents	Fatal	Personal Injury	Property Damage	Persons: Killed	Injured	Motor Vehicle Registrations
Anson,Hindon,Minden, twp		2,683	1	-	-	1	-	-	
Dysart,Et Al, twp		3,928	8	-	-	8	-	-	
Provincial Highway		-	237	2	63	172	3	100	
Other Areas		5,373	221	-	62	159	-	77	
Haliburton		**11,984**	**467**	**2**	**125**	**340**	**3**	**177**	**10,713**
Burlington,c		118,546	1,662	4	463	1,195	4	720	
Halton Hills, t		34,189	627	6	157	464	6	245	
Milton, t		30,529	675	2	186	487	3	289	
Oakville, t		98,404	1,343	3	310	1,030	3	456	
Provincial Highway		-	1,976	10	601	1,365	11	1,012	
Other Areas		-	91	1	24	66	2	40	
Halton	**M**	**281,668**	**6,374**	**26**	**1,741**	**4,607**	**29**	**2,762**	**204,956**
Ancaster, t		19,728	180	1	73	106	1	118	
Dundas t		20,640	210	-	74	136	-	110	
Flamborough, t		27,116	221	5	73	143	7	124	
Glanbrook, twp		9,493	61	1	30	30	2	49	
Hamilton,c		307,160	5,607	10	2,288	3,309	10	3,344	
Stoney Creek,c		45,329	437	2	169	266	2	295	
Provincial Highway		-	1,358	12	466	880	13	798	
Other Areas		-	115	1	49	65	1	83	
Hamilton-Went.	**M**	**429,486**	**8,189**	**32**	**3,222**	**4,935**	**36**	**4,921**	**256,084**
Bancroft,vl		2,248	38	-	7	31	-	14	
Belleville,c	M	35,326	914	1	213	700	1	290	
Deseronto, t	M	1,774	20	-	1	19	-	1	
Frankford,vl		2,020	17	-	2	15	-	4	
Hungerford, twp		2,589	4	-	1	3	-	2	
Marmora and Lake, twp		1,599	1	-	-	1	-	-	
Sidney, twp		15,791	3	-	2	1	-	3	
Stirling,vl	M	1,880	15	-	1	14	-	1	
Thurlow , twp		6,864	2	-	1	1	-	1	
Trenton,c	M	14,765	342	-	89	253	-	122	
Tweed,vl		1,549	20	-	3	17	-	5	
Tyendinaga, twp		2,651	1	-	-	1	-	-	
Provincial Highway		-	729	9	276	444	12	482	
Other Areas		17,184	563	11	164	388	12	268	
Hastings		**106,240**	**2,669**	**21**	**760**	**1,888**	**25**	**1,193**	**84,820**
Ashfield, twp		1,656	1	-	1	-	-	1	
Clinton, t	M	3,091	51	-	5	46	-	6	
Colborne, twp		1,833	14	-	3	11	-	5	
Exeter, t	M	3,767	67	-	23	44	-	29	
Goderich, t	M	7,348	136	-	32	104	-	43	
Goderich, twp		2,319	4	-	2	2	-	3	
Grey, twp		1,918	1	-	-	1	-	-	
Hay, twp		1,918	2	-	-	2	-	-	
Seaforth, t	M	2,100	31	-	9	22	-	12	
Stanley, twp		1,591	1	-	-	1	-	-	
Wingham, t	M	2,970	42	-	7	35	-	7	

Table 4.1 Continued

Location		Estimated Population (1988)	Class of Accident: Total Accidents	Fatal	Personal Injury	Property Damage	Persons: Killed	Injured	Motor Vehicle Registrations
Provincial Highway		-	239	3	73	163	3	142	
Other Areas		25,078	217	4	104	209	8	166	
Huron		**55,589**	**906**	**7**	**259**	**640**	**11**	**414**	**38,495**
Dryden, t	M	6,219	73	-	10	63	-	10	
Ignace, twp		1,979	2	-	-	2	-	-	
Jaffray & Melick, t		3,651	24	-	7	17	-	7	
Keewatin, t		1,974	17	-	3	14	-	9	
Kenora, t	M	9,373	220	-	31	189	-	39	
Sioux Lookout, t		3,027	42	-	17	25	-	22	
Provincial Highway		-	639	12	184	443	12	308	
Other Areas		8,927	210	2	53	155	2	87	
Kenora		**35,150**	**1,227**	**14**	**305**	**908**	**14**	**482**	**34,163**
Blenheim, t		4,336	49	-	11	38	-	14	
Chatham , c	M	41,840	872	-	257	615	-	335	
Chatham, twp		6,369	18	-	5	13	-	7	
Dover, twp		3,974	1	-	-	1	-	-	
Dresden, t	M	2,546	32	-	7	25	-	13	
Harwich, twp		6,089	2	-	-	2	-	-	
Howard, twp		2,334	1	-	1	-	-	2	
Raleigh, twp		5,596	1	-	-	1	-	-	
Romney, twp		1,846	1	-	-	1	-	-	
Ridgetown, t		3,152	26	-	8	18	-	11	
Tilbury, t	M	4,186	82	-	19	63	-	23	
Tilbury East, twp		2,310	1	-	-	1	-	-	
Wallaceburg, t	M	11,462	187	-	66	121	-	106	
Wheatly,vl		1,539	13	-	3	10	-	4	
Provincial Highway		-	399	5	141	253	5	278	
Other Areas		7,597	453	5	167	281	5	292	
Kent		**105,176**	**2,138**	**10**	**685**	**1,443**	**10**	**1,085**	**76,559**
Bosanquet, twp		4,415	2	-	-	2	-	-	
Enniskillen, twp		3,144	1	-	-	1	-	-	
Forest, t		2,555	23	-	5	18	-	6	
Petrolia, t	M	4,168	42	-	7	35	-	9	
Plympton, twp		4,860	2	-	1	1	-	2	
Point Edward,vl	M	2,216	16	-	9	7	-	11	
Sarnia-Clearwater, c	M	70,877	1,275	3	280	992	3	418	
Wyoming,vl		1,824	7	-	1	6	-	1	
Provincial Highway		-	354	5	116	233	5	200	
Other Areas		25,469	762	6	212	544	8	328	
Lambton		**119,528**	**2,484**	**14**	**631**	**1,839**	**16**	**975**	**85,986**
Almonte, t		4,026	30	-	14	16	-	20	
Beckwith, twp		3,648	1	-	-	1	-	-	
Carleton Place, t	M	6,634	109	-	26	83	-	31	
Pakenham, twp		1,644	1	-	1	-	-	3	
Perth, t	M	5,463	135	1	29	105	1	39	
Ramsay, twp		3,132	1	-	-	1	-	-	
Smiths Falls , t	M	9,047	185	1	50	134	1	72	

Table 4.1 Continued

Location	Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Injured	Motor Vehicle Registrations
Provincial Highway	-	305	6	96	203	7	161	
Other Areas	15,889	410	4	100	306	6	142	
Lanark	**49,483**	**1,177**	**12**	**316**	**849**	**15**	**468**	**36,525**
Brockville, c M	20,607	480	2	106	372	2	163	
Elizabethtown, twp	6,711	1	-	-	1	-	-	
Front of Yonge, twp	2,075	2	-	1	1	-	1	
Gananoque, t M	4,866	58	-	14	44	-	14	
Kitley, twp	2,000	1	-	1	-	-	1	
R.Leeds & Landsdowne, twp	2,445	2	-	1	1	-	1	
R. Yonge & Escott, twp	1,525	3	-	-	3	-	-	
South Crosby	1,539	2	-	-	2	-	-	
South Elmsley, twp	2,797	2	-	-	2	-	-	
Provincial Highway	-	479	12	180	287	17	306	
Other Areas	10,571	360	3	122	235	4	172	
Leeds	**55,136**	**1,390**	**17**	**425**	**948**	**23**	**658**	**38,288**
Napanee, t	4,604	112	-	35	77	-	60	
Richmond, twp	1,374	1	-	-	1	-	-	
Provincial Highway	-	357	12	118	227	17	202	
Other Areas	27,020	296	2	72	222	2	120	
Lennox & Addington	**32,998**	**766**	**14**	**225**	**527**	**19**	**382**	**21,916**
Provincial Highway	-	102	-	33	69	-	53	
Other Areas	6,771	93	1	25	67	1	36	
Manitoulin	**6,771**	**195**	**1**	**58**	**136**	**1**	**89**	**7,480**
Biddulph , twp	2,202	1	-	-	1	-	-	
Caradoc, twp	5,458	3	1	2	-	1	7	
Delaware, twp	2,172	2	-	1	1	-	2	
Ekfrid, twp	2,020	1	-	-	1	-	-	
Glencoe,vl	1,801	12	-	3	9	-	3	
London,c M	281,745	6,151	7	2,279	3,865	7	3,328	
London, twp	5,626	4	-	-	4	-	-	
Lucan,vl	1,740	9	-	3	6	-	3	
Strathroy, t M	9,186	104	-	23	81	-	28	
Westminster, t	6,062	20	-	3	17	-	3	
Provincial Highway	-	856	11	317	528	21	556	
Other Areas	26,574	886	10	337	539	12	555	
Middlesex	**344,586**	**8,049**	**29**	**2,968**	**5,052**	**41**	**4,485**	**230,181**
Bracebridge, t	9,986	195	-	52	143	-	77	
Gravenhurst, t	8,624	123	1	33	89	1	53	
Huntsville, t	12,320	91	-	21	70	-	30	
Lake of Bays, twp	2,305	2	-	-	2	-	-	
Muskoka Lakes, twp	4,851	27	-	6	21	-	9	
Provincial Highway	-	577	8	173	396	12	312	
Other Areas	1,872	422	3	113	306	3	164	
Muskoka	**39,958**	**1,437**	**12**	**398**	**1,027**	**16**	**645**	**35,124**
Fort Erie, t	23,486	447	2	129	316	2	192	
Grimsby, t	16,996	226	-	71	155	-	112	
Lincoln, t	14,335	233	3	71	159	3	124	

Table 4.1 **Continued**

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Persons Injured	Motor Vehicle Registrations
Niagara Falls, c		70,540	1,922	7	466	1,449	8	746	
Niagara-on-the-lake, t		12,050	147	2	45	100	2	70	
Pelham, t		12,430	152	1	47	104	1	72	
Port Colborne, c		17,893	275	-	66	209	-	84	
St. Catherines, c		120,567	2,563	6	631	1,926	6	910	
Thorold, c		16,589	225	1	52	172	1	85	
Wainfleet, twp		5,809	62	1	18	43	1	23	
Welland , c		44,569	1,179	3	274	902	3	406	
West Lincoln, twp		9,933	112	3	31	78	4	55	
Provincial Highway		-	1,582	12	473	1,097	13	822	
Other Areas		-	464	5	127	332	9	205	
Niagara	**M**	**365,197**	**9,589**	**46**	**2,501**	**7,042**	**53**	**3,906**	**258,682**
East Ferris, twp		3,496	1	-	1	-	-	1	
Mattawa, t		2,491	9	-	1	8	-	1	
North Bay, c	M	51,313	923	3	301	619	4	445	
Springer, twp		2,269	1	-	-	1	-	-	
Sturgeon Falls, t	M	5,770	93	-	22	71	-	37	
Provincial Highway		-	688	9	254	425	10	466	
Other Areas		9,260	191	-	63	128	-	99	
Nipissing		**74,599**	**1,906**	**12**	**642**	**1,252**	**14**	**1,049**	**52,312**
Brighton, t		3,686	29	-	12	17	-	18	
Brighton, twp		2,940	2	-	-	2	-	-	
Campbellford, t		3,408	44	-	10	34	-	13	
Cobourg , t	M	13,210	237	-	70	167	-	91	
Colborne, vl		1,869	14	-	3	11	-	5	
Cramahe, twp		2,461	1	-	-	1	-	-	
Haldimand, twp		3,628	8	-	2	6	-	5	
Hamilton, twp		8,085	5	-	1	4	-	2	
Hope, twp		3,636	1	-	-	1	-	-	
Murray, twp		5,958	2	-	1	1	-	1	
Percy, twp		2,700	1	-	-	1	-	-	
Port Hope, t	M	10,243	82	-	27	55	-	36	
Seymour, twp		3,527	6	-	2	4	-	3	
Provincial Highway		-	630	10	223	397	14	386	
Other Areas		1,881	580	4	191	385	4	297	
Northumberland		**67,232**	**1,642**	**14**	**542**	**1,086**	**18**	**857**	**49,491**
Cumberland, twp		30,164	207	3	63	141	3	91	
Gloucester,c	M	93,121	1,099	5	255	839	5	367	
Goulbourn, twp		13,099	142	2	39	101	2	68	
Kanata , c		30,295	352	2	95	255	2	138	
Nepean, c	M	97,883	1,404	1	357	1,046	1	536	
Osgoode , twp		11,670	134	1	32	101	1	49	
Ottawa, c	M	303,747	6,782	10	2,199	4,573	10	2,997	
Rideau, twp		10,370	128	-	31	97	-	53	
Rockcliffe Park,vl		2,295	16	-	6	10	-	7	
Vanier, c		18,190	290	2	108	180	2	146	
West Carleton, twp		12,301	115	-	45	70	-	80	

Table 4.1 Continued

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Injured	Motor Vehicle Registrations
Provincial Highway		-	1,587	9	470	1,108	10	757	
Other Areas		-	997	4	284	709	6	400	
Ottawa-Carleton		**623,135**	**13,253**	**39**	**3,984**	**9,230**	**42**	**5,689**	**365,766**
Blandford-Blenheim, twp		6,467	2	-	-	2	-	-	
E. Zorra-Tavistock, twp	M	6,878	2	-	1	1	-	3	
Ingersoll, t	M	8,253	142	-	40	102	-	57	
Norwich, twp	M	9,453	15	-	3	12	-	3	
S. West Oxford, twp		8,067	8	-	2	6	-	2	
Tillsonburg, t	M	10,621	189	1	56	132	1	80	
Woodstock, c	M	26,295	681	-	197	484	-	292	
Zorra, twp		7,984	3	-	2	1	-	2	
Provincial Highway		-	607	14	237	356	19	439	
Other Areas		-	520	4	168	348	4	255	
Oxford		**84,008**	**2,189**	**19**	**706**	**1,444**	**24**	**1,133**	**64,348**
Himsworth North , twp		2,653	2	-	2	-	-	2	
McDougall, twp		1,774	3	1	1	1	1	1	
Parry Sound , t	M	5,895	89	-	19	70	-	26	
Perry , twp		1,635	1	-	-	1	-	-	
Provincial Highway		-	634	10	189	435	13	395	
Other Areas		18,181	350	2	99	249	2	150	
Parry Sound		**30,138**	**1,078**	**13**	**310**	**755**	**16**	**574**	**29,431**
Brampton , c		192,045	3,533	8	966	2,559	10	1,478	
Caledon, t		31,126	817	10	248	559	10	421	
Mississauga, c		385,156	7,255	21	1,928	5,306	24	2,927	
Provincial Highway		-	2,765	22	907	1,836	23	1,506	
Other Areas		-	406	2	103	301	2	151	
Peel	**M**	**608,327**	**14,776**	**63**	**4,152**	**10,561**	**89**	**6,483**	**435,967**
Elma, twp		3,898	4	1	2	1	1	4	
Listowel, t	M	5,083	96	-	18	78	-	24	
Logan, twp		2,134	1	-	1	-	-	1	
Mitchell, t	M	3,078	42	-	8	34	-	8	
Mornington, twp		3,173	1	-	-	1	-	-	
St. Mary's, t	M	4,923	70	-	14	56	-	17	
Stratford, c	M	26,078	518	1	124	393	1	164	
Wallace, twp		2,294	1	-	-	1	-	-	
Provincial Highway		-	237	2	84	151	2	147	
Other Areas		39,349	333	5	110	218	7	187	
Perth		**66,226**	**1,303**	**9**	**361**	**933**	**11**	**552**	**46,101**
Asphodel, twp		1,870	1	-	1	-	-	1	
Belmont & Methuen, twp		2,472	4	-	2	2	-	3	
Lakefield, vl	M	2,359	21	-	3	18	-	7	
Otonabee, twp		4,593	1	-	-	1	-	-	
Peterborough, c	M	62,005	1,191	5	421	765	5	635	
Smith, twp		8,002	1	-	-	1	-	-	
Provincial Highway		-	493	7	166	320	11	269	
Other Areas		24,192	715	5	233	477	5	346	
Peterborough		**105,493**	**2,427**	**17**	**826**	**1,584**	**21**	**1,261**	**79,062**

Table 4.1 Continued

Location	Estimated Population (1988)	Class of Accident: Total Accidents	Fatal	Personal Injury	Property Damage	Persons: Killed	Injured	Motor Vehicle Registrations
Alfred, twp	1,914	1	-	-	1	-	-	
East Hawkesbury , twp	2,927	2	-	-	2	-	-	
Hawkesbury, t M	9,400	138	-	33	105	-	42	
L'Original , vl	1,970	11	-	3	8	-	4	
Plantagenet North, twp	2,880	1	-	1	-	-	1	
South Plantagenet, twp	1,579	4	-	-	4	-	-	
Vankleek Hill, t	1,745	18	-	5	13	-	6	
W. Hawkesbury, twp	2,710	4	-	-	4	-	-	
Provincial Highway	-	194	4	66	124	4	117	
Other Areas	3,868	249	3	89	157	3	121	
Prescott	**28,993**	**622**	**7**	**197**	**418**	**7**	**291**	**20,733**
Picton, t	4,049	65	-	17	48	-	24	
Sophiasburg , twp	1,860	1	-	1	-	-	1	
Provincial Highway	-	89	1	34	54	1	55	
Other Areas	15,884	218	1	66	151	3	87	
Prince Edward	**21,793**	**373**	**2**	**118**	**253**	**4**	**167**	**16,666**
Atikokan, twp M	4,092	15	-	3	12	-	3	
Fort Frances, t M	8,589	215	-	43	172	-	59	
Provincial Highway	-	205	1	56	148	1	99	
Other Areas	6,300	132	-	29	103	-	39	
Rainy River	**18,981**	**567**	**1**	**131**	**435**	**1**	**200**	**15,892**
Arnprior, t	6,002	49	-	12	37	-	24	
Deep River, t M	4,116	19	-	5	14	-	5	
Pembroke, c M	13,595	289	1	81	207	1	117	
Pembroke, twp	1,517	1	-	-	1	-	-	
Petawawa , twp	7,905	2	-	1	1	-	1	
Petawawa, vl	5,189	8	-	-	8	-	-	
Renfrew, t M	7,914	108	-	38	70	-	53	
Provincial Highway	-	524	14	176	334	21	303	
Other Areas	39,715	630	5	202	423	9	290	
Renfrew	**85,953**	**1,630**	**20**	**515**	**1,095**	**31**	**793**	**70,754**
Cambridge, twp	5,249	4	1	1	2	1	1	
Casselman, vl	2,021	14	-	3	11	-	4	
Clarence, twp	7,885	3	-	1	2	-	2	
Rockland, t	5,119	47	-	10	37	-	12	
Russell, twp	8,518	1	-	-	1	-	-	
Provincial Highway	-	92	1	30	61	1	55	
Other Areas	1,353	348	3	101	244	5	149	
Russell	**30,145**	**509**	**5**	**146**	**358**	**7**	**223**	**30,729**
Adjala, twp	4,058	1	-	-	1	-	-	
Alliston, t M	4,885	61	1	11	49	1	18	
Barrie, c M	49,818	1,432	4	331	1,097	5	507	
Beeton, vl	2,189	7	-	4	3	-	7	
Bradford, t M	10,188	160	-	36	124	-	50	
Collingwood, t M	12,196	277	3	56	218	4	95	
Elmvale, vl	1,564	19	-	-	19	-	-	
Essa , twp	12,828	4	-	1	3	-	1	

Table 4.1 Continued

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Injured	Motor Vehicle Registrations
Flos , twp		2,666	1	-	-	1	-	-	
Innisfil, twp	M	14,529	12	-	3	9	-	9	
Mara, twp		4,226	7	-	5	2	-	9	
Medonte, twp		4,583	5	-	1	4	-	1	
Midland , t	M	12,171	252	-	76	176	-	129	
Nottawasaga, twp		4,854	1	-	-	1	-	-	
Orillia, c	M	23,893	567	-	113	454	-	162	
Orillia, twp		7,238	6	-	1	5	-	1	
Oro, twp		7,789	3	-	1	2	-	1	
Penetanguishene, t	M	5,533	117	-	20	97	-	21	
Port McNicoll , vl		1,818	11	-	4	7	-	5	
Stayner , t		3,045	46	-	15	31	-	24	
Sunnidale, twp		2,304	2	-	1	1	-	1	
Tay, twp		5,943	7	-	-	7	-	-	
Tecumseth , twp		7,370	12	-	5	7	-	5	
Tiny , twp		7,393	6	-	5	1	-	8	
Tosorontio, twp		3,590	1	-	-	1	-	-	
Tottenham, vl		2,856	25	-	9	16	-	10	
Vespra, twp		6,502	5	-	1	4	-	1	
Wasaga Beach, t		4,807	119	-	41	78	-	59	
W Gwillimbury , twp		4,431	3	-	2	1	-	2	
Provincial Highway		-	2,139	17	648	1,474	21	1,151	
Other Areas		6,427	1,853	17	602	1,234	20	943	
Simcoe		**241,894**	**7,161**	**42**	**1,992**	**5,127**	**51**	**3,220**	**195,140**
Cornwall, c	M	45,529	1,054	5	340	709	5	521	
Cornwall, twp		5,770	2	-	-	2	-	-	
Osnabruck , twp		4,236	1	-	-	1	-	-	
Provincial Highway		-	199	2	81	116	2	139	
Other Areas		5,817	133	2	52	79	2	80	
Stormont		**61,352**	**1,389**	**9**	**473**	**907**	**9**	**740**	**38,931**
Capreol, t		3,531	46	-	7	39	-	10	
Espanola , t	M	5,358	54	-	8	46	-	9	
Nickel Centre, t		11,063	121	1	32	88	1	44	
Onaping Falls, t		5,153	32	-	7	25	-	8	
Rayside-Balfour, t		13,702	178	-	50	128	-	90	
Sudbury, c		89,698	2,820	4	798	2,018	4	1,181	
Valley East, t		19,119	314	1	112	201	1	175	
Walden, t		9,048	139	1	40	98	1	63	
Provincial Highway		-	779	18	260	501	27	439	
Other Areas		12,005	379	2	110	267	2	182	
Sudbury	**M**	**168,677**	**4,862**	**27**	**1,424**	**3,411**	**36**	**2,201**	**116,842**
Geraldton, t		2,528	16	-	5	11	-	5	
Longlac, t		2,133	15	-	3	12	-	3	
Manitouwadge, twp		3,603	32	-	7	25	-	10	
Marathon, t	M	4,140	43	-	11	32	-	14	
Nipigon, twp		2,389	17	-	4	13	-	5	
Paipoonge, twp		2,750	1	-	-	1	-	-	

Table 4.1 **Continued**

Location		Estimated Population (1988)	Class of Accident: Total Accidents	Fatal	Personal Injury	Property Damage	Persons: Killed	Persons: Injured	Motor Vehicle Registrations
Red Rock, twp	M	1,393	2	-	1	1	-	1	
Schreiber , twp		1,891	2	-	-	2	-	-	
Terrace Bay, twp	M	2,491	6	-	-	6	-	-	
Thunder Bay	M	109,269	3,151	3	765	2,383	3	1,124	
Provincial Highway		-	1,020	10	313	697	18	562	
Other Areas		8,364	307	3	82	222	3	125	
Thunder Bay		**140,951**	**4,612**	**16**	**1,191**	**3,405**	**24**	**1,849**	**109,898**
Cobalt, t		1,481	18	-	2	16	-	2	
Englehart , t		1,707	6	-	1	5	-	1	
Haileybury, t		4,744	54	-	13	41	-	18	
Kirkland Lake, t		11,300	174	-	39	135	-	52	
New Liskeard, t	M	5,159	104	-	18	86	-	31	
Provincial Highway		-	399	5	132	262	5	207	
Other Areas		11,350	139	1	35	103	1	57	
Timiskaming		**35,741**	**894**	**6**	**240**	**648**	**6**	**368**	**24,899**
East York, borough		96,497	1,099	2	295	802	2	433	
Etobicoke, c		293,433	4,831	10	1,532	3,289	10	2,340	
North York, c		544,960	10,763	13	3,507	7,243	16	5,448	
Scarborough, c		470,406	8,833	16	2,855	5,962	16	4,428	
Toronto, c		597,126	20,142	27	5,735	14,380	29	7,960	
York, c		131,537	1,894	1	535	1,358	1	804	
Provincial Highway		-	7,432	12	2,233	5,187	13	3,712	
Toronto Metro.	**M**	**2,133,559**	**54,994**	**81**	**16,692**	**38,221**	**87**	**25,125**	**1,142,457**
Bobcaygeon, vl		1,944	15	-	3	12	-	3	
Eldon, twp		2,292	1	-	1	-	-	2	
Emily, twp		5,350	2	-	-	2	-	-	
Fenelon, twp		1,755	22	-	5	17	-	5	
Fenelon, twp		5,141	6	-	3	3	-	7	
Lindsay , t	M	15,265	378	1	98	279	1	135	
Manvers, twp		4,565	1	-	-	1	-	-	
Mariposa , twp		5,771	3	-	-	3	-	-	
Ops, twp		3,589	1	-	-	1	-	-	
Somerville, twp		1,756	1	-	-	1	-	-	
Verulam, twp		3,327	1	-	-	1	-	-	
Provincial Highway		-	478	4	147	327	5	268	
Other Areas		4,377	503	3	141	359	4	214	
Victoria		**55,132**	**1,412**	**8**	**398**	**1,006**	**10**	**634**	**46,130**
Cambridge, c		80,657	1,702	3	498	1,201	4	726	
Kitchener, c		152,771	3,334	5	933	2,396	5	1,325	
North Dumpfries, twp		5,486	103	-	35	68	-	52	
Waterloo, c		67,435	1,425	-	384	1,041	-	564	
Wellesley, twp		7,500	27	-	9	18	-	19	
Wilmot, twp		11,423	125	2	33	90	2	55	
Woolwich, twp		16,758	231	2	67	162	2	94	
Provincial Highway		-	982	6	296	680	6	509	
Other Areas		-	314	2	89	223	2	145	

Table 4.1 Continued

Location		Estimated Population (1988)	Class of Accident Total Accidents	Fatal	Personal Injury	Property Damage	Persons Killed	Injured	Motor Vehicle Registrations
Waterloo	**M**	**342,030**	**8,243**	**20**	**2,344**	**5,879**	**21**	**3,489**	**229,249**
Arthur, twp		2,132	3	-	-	3	-	-	
Arthur, vl		1,967	27	-	6	21	-	8	
Elora, vl		2,991	30	-	16	14	-	22	
Eramosa, twp		4,984	3	1	1	1	1	1	
Erin, twp		6,606	10	-	1	9	-	1	
Erin, vl		2,308	17	-	6	11	-	7	
Fergus, t	M	6,757	97	-	25	72	-	34	
Guelph, c	M	80,786	1,369	1	483	885	1	712	
Guelph , twp		3,075	5	-	2	3	-	2	
Harriston, t	M	1,940	18	-	-	18	-	-	
Maryborough, twp		2,358	2	-	-	2	-	-	
Mount Forest, t	M	3,713	43	1	12	30	1	22	
Nichol, twp		3,742	5	-	3	2	-	3	
Palmerston, t	M	2,085	10	-	3	7	-	5	
Peel, twp		3,914	2	-	-	2	-	-	
Pilkington, twp		2,138	2	-	1	1	-	2	
Puslinch, twp		4,703	5	-	-	5	-	-	
West Garafaxa , twp		2,837	1	-	-	1	-	-	
Provincial Highway		-	854	8	312	534	11	559	
Other Areas		4,742	832	10	276	546	11	426	
Wellington		**143,778**	**3,335**	**21**	**1,147**	**2,167**	**25**	**1,804**	**102,414**
Aurora, t		24,545	388	1	84	303	1	133	
Georgina, twp		22,587	319	5	67	247	6	114	
E. Gwillimbury, t		16,513	308	4	76	228	4	133	
King , twp		16,607	283	3	58	222	3	90	
Markham, t		129,501	1,967	7	390	1,570	8	633	
Newmarket, t		37,277	601	2	99	500	2	149	
Richmond Hill, t		57,082	864	5	199	660	7	311	
Vaughan, t		88,475	1,665	7	340	1,318	8	540	
Whitchurch-Stouffville, t		16,705	285	2	77	206	2	109	
Provincial Highway		-	3,321	21	987	2,313	22	1,753	
Other Areas		-	539	-	105	434	-	112	
York	**M**	**409,292**	**10,540**	**57**	**2,482**	**8,001**	**63**	**4,077**	**325,154**

* Source: Ontario Ministry of Municipal Affairs
Municipal Directory 1989

Population data in this table refers to those persons residing in a municipality on a permanent basis.

5 the vehicle

Passenger vehicles represent 74% of all registered vehicles, but are 60% of vehicles in fatal accidents, 73% in injury accidents, and 72% in property damage accidents. Trucks are 16% of registered vehicles. Tractor & semi-trailer vehicles are 7%, 1% and 2% in fatal, injury and property damage accidents respectively. Trucks were 23% of fatal, 17% of personal injury and 21% of property damage accidents. Motorcycles are 2% of vehicles but 5% of fatal accidents, 2% of injury accidents but less than one half per cent in property damage accidents.

Uninsured vehicles represent 2% of those involved in accidents. Of those vehicles in fatal accidents 92% had no defect, 96% and 93% had no defects in personal injury and property damage accidents respectively. Of the vehicles with defects, the majority involved the brakes and tires.

Of the vehicles involved in accidents, 2% were uninsured. This breaks down to 4%, 3% and 1% in fatal, injury and property damage accidents.

5a. vehicles in accidents

Table 5.1 Type of Vehicle Involved in All Accidents 1990

Type of Vehicle	Fatal	Personal Injury	Property Damage	Total
Passenger Car	993	90,370	204,717	**296,080**
Passenger Car & Trailer	6	210	644	**860**
Truck	358	20,984	57,875	**79,217**
Truck & Trailer	20	589	1,925	**2,534**
Tractor & Semi-trailer	118	1,411	4,615	**6,144**
Motorcycle	77	2,721	698	**3,496**
Bus	9	913	2,135	**3,057**
School Bus/Vehicle	11	353	1,070	**1,434**
Other - Or not Known	12	1,923	10,724	**12,659**
Non Motor Vehicle	54	4,194	1,542	**5,790**
Total	**1,658**	**123,668**	**285,945**	**411,271**

In 1988, major revisions were made in the recording of motor vehicle accident data. The above table now reflects a consolidation of various types of vehicles and /or trailers. Therefore, valid conclusions cannot be made when comparing this data to that of the years previous to 1988.

More detailed information for some vehicles is provided in the Vehicles of Special Interest Section.

Table 5.2 Condition of Vehicle by Class of Accident 1990

Condition of Vehicle	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
No Apparent Defect	1,533	118,157	267,085	**386,775**
Service Brakes Defective	8	331	472	**811**
Steering Defective	-	51	82	**133**
Tire Puncture or Blow Out	-	206	359	**565**
Tire Tread Insufficient	14	121	156	**291**
Headlamps Defective	-	28	19	**47**
Other Lamps or Reflectors Defective	-	61	137	**198**
Engine Controls Defective	1	46	110	**157**
Wheels or Suspension Defective	-	37	114	**151**
Vision Obscured	-	14	20	**34**
Trailer Hitch Defective	-	5	45	**50**
Other Defects	28	671	1,624	**2,323**
Unknown	74	3,940	15,722	**19,736**
Total	**1,658**	**123,668**	**285,945**	**411,271**

Most vehicles in accidents were recorded as not having a defect. The most common known defect in fatal accidents was insufficient tire tread. In personal injury and property damage accidents the most common known defect is defective brakes followed by tire puncture or blow out.

Table 5.3 Model Year of Vehicle by Class of Accident 1990

Model Year of Vehicle	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
1991	7	435	1,309	**1,751**
1990	122	8,243	19,595	**27,960**
1989	216	13,146	30,961	**44,323**
1988	188	13,522	32,434	**46,144**
1987	162	12,027	27,745	**39,934**
1986	154	12,261	28,630	**41,045**
1985	156	11,100	25,523	**36,779**
1984	106	9,640	21,811	**31,557**
1983	80	6,513	13,930	**20,523**
1982	72	5,425	11,715	**17,212**
1981 and earlier	349	25,380	57,045	**82,774**
Unknown	46	5,976	15,247	**21,269**
Total	**1,658**	**123,668**	**285,945**	**411,271**

Table 5.4 Insurance Status of Vehicle by Class of Accident 1990

Insurance	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
Insured	1,531	113,546	264,849	**379,926**
Not Insured	65	3,429	3,673	**7,167**
Unknown	62	6,693	17,423	**24,178**
Total	**1,658**	**123,668**	**285,945**	**411,271**

5b. putting the vehicle in context

Table 5.5 Vehicle Population by Type of Vehicle 1990

Vehicle Class	
Passenger	4,756,855
Motorcycle	120,411
Moped	4,427
Commercial	1,051,259
Bus	19,679
School Bus	9,655
Motorized Snow Vehicle	328,343
Off-Road Vehicle	80,274
Road Building Machinery	1,016
Permanent Apparatus	4,041
Farm Trucks	32,979
Total	**6,408,939**

Table 5.7 Vehicle Damage Level 1990

Damage	Class of Accidents			Total
	Fatal	Personal Injury	Property Damage	
None	75	13,458	19,006	**32,539**
Light	197	32,999	118,524	**151,720**
Moderate	183	32,791	99,610	**132,584**
Severe	280	27,772	28,452	**56,504**
Demolished	882	12,334	4,702	**17,918**
Unknown	41	4,314	15,651	**20,006**
Total	**1,658**	**123,668**	**285,945**	**411,271**

Vehicle Damage

None -No visible damage.

Light -Slight or superficial damage. Includes scratches, small dents, minor cracks in glass that do not affect safety or performance of vehicle.

Moderate -Unsafe conditions result from damage. Vehicle must be repaired to make its condition meet requirements of law. Vehicle can be driven off road or limited distance but doing so would be unsafe.

Severe -Vehicle cannot be driven. Requires towing. Would normally be repaired.

Demolished -Vehicle damaged to the extent that repairs would not be feasible.

Table 5.6 Selected Types of Vehicles by Model Year 1990

Vehicle Class	Model Years											Total
	91	90	89	88	87	86	85	84	83	82	81+	
Passenger	77,245	397,947	457,011	478,829	440,238	488,839	435,008	388,805	260,965	216,568	1,115,400	**4,756,855**
Motorcycle	142	2,607	3,386	4,343	4,617	8,290	11,625	13,729	12,488	13,236	45,948	**120,411**
Moped	-	19	24	25	103	74	58	67	185	220	3,652	**4,427**
Commercial	12,831	81,083	107,920	123,715	97,470	98,451	81,639	67,366	41,723	36,182	340,747	**1,089,127**
Bus	217	2,808	3,079	3,141	3,118	2,347	2,470	2,112	1,643	1,344	7,223	**29,502**
Motorized Snow Vehicle	7,676	15,227	16,473	14,843	11,977	9,612	8,088	5,651	6,371	10,149	222,276	**328,343**
Off-Road Vehicle	410	4,590	4,406	3,983	7,541	11,982	11,230	12,800	9,512	4,465	9,355	**80,274**
Total	**98,521**	**504,281**	**592,299**	**628,879**	**565,064**	**619,595**	**550,118**	**490,530**	**332,887**	**282,164**	**1,744,601**	**6,408,939**

6 vehicles of special interest

While passenger vehicles make up the majority of the motor vehicle population in Ontario, they share the road with other vehicles such as motorcycles, school vehicles, trucks, motorized snow vehicles, off-road vehicles, and bicycles. These vehicles present some special concerns in terms of their operating characteristics, accident trends, changes in vehicle population size or in areas of particular public concern. Some of the statistics pertaining to the unique road safety issues concerning these vehicles are presented in this section.

6a. motorcycles

Table 6.1 Motorcyclists* Killed and Injured 1986 - 1990

Year	Drivers		Passengers	
	Killed	Injured	Killed	Injured
1986	99	5,012	15	870
1987	120	4,721	12	798
1988	76	3,866	13	666
1989	78	2,945	8	599
1990	68	2,392	6	580

* Excludes moped drivers and passengers

The number of registered motorcycles continues to decrease. Motorcycles now constitute 1.9% of registered motor vehicles. While the number of fatalities was down, motorcycle drivers and passengers represented 6.6% of all fatalities.

Figure 6.1 Registered Motorcycles and Licensed Motorcyclists 1981-1990

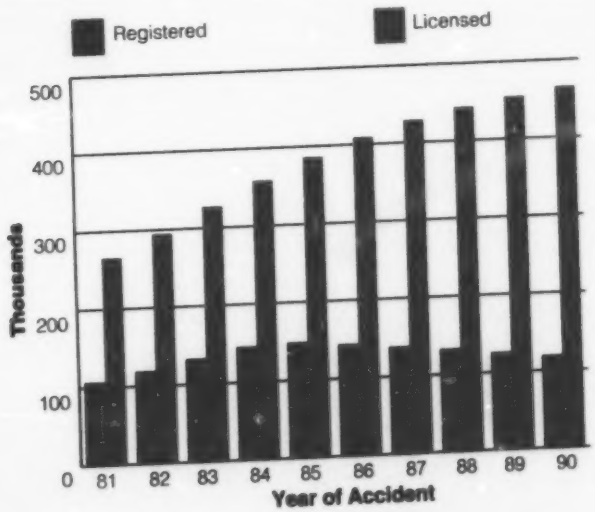


Table 6.2 Selected Factors Relevant to Fatal Motorcycle Accidents 1990

Factors	%
Unlicensed Motorcycle Drivers	21
Under 25 Years Old	57
Alcohol Used	
Ability Impaired Alcohol >.08	34
Had Been Drinking	8
Unknown	13
Helmet Not Worn (Fatalities)	18
Motorcycle Driver Error	
Speed Too Fast/Lost Control	60
Other Error	20
Single Vehicle Accidents	42
Day/Night	45/56
Weekend	38

Of all motorcycle drivers in fatal accidents, 57% were under the age of 25. Approximately 60% of the errors attributable to the motorcycle rider in fatal accidents was speed to fast or lost control. Of the drivers in fatal accidents, 21% were not correctly licensed for the vehicle.

6b. school vehicles

Table 6.3 Pupils Transported Daily, Total Accidents and Injury Rate per 100,000 Pupils - School Years 1985/86 - 1989/90

School Year	Pupils Transported Daily	Total Number of Accidents	Injury Rate Per 100,000 Pupils	
			Fatal	Non-Fatal
1985/86	652,406	961	0.1	44
1986/87	685,825	922	0.1	26
1987/88	712,893	852	0.4	30
1988/89	751,153	1,259	0.3	27
1989/90	771,729	1,444	0.1	30

Table 6.4 School Vehicle Type by Nature of Accident 1989/90

School Vehicle Type	Nature of Accident				Total Number of Accidents	Five Year Total (1985/86 1989/90)
	Fatal	Pupil Injury	Non-Pupil Injury	Property Damage		
School Bus	6	65	228	939	1,238	4,471
School Van	1	14	26	131	172	1,068
Other School Vehicles	1	3	266	18	32	47
Total Accidents	**9**	**3**	**310**	**1,088**	**1,444**	**5,438**

Table 6.5 Pupil Injury by Accident Event and Vehicle Type 1989/90

School Vehicle Type	Accident Event						Total		Five Year Total (1985/86 1989/90)	
	Crossing Road		Within School Vehicle		Other					
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
School Bus	1	10	-	191	-	7	1	208	7	935
School Van	-	-	-	27	-	-	-	27	-	199
Other School Vehicles	-	-	-	3	-	1	-	4	1	21
Total	**1**	**10**	**-**	**221**	**-**	**8**	**1**	**239**	**8**	**1,155**

6c. trucks

Table 6.6 Class of Truck Accident 1986 - 1990

Year	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
1986	416	21,337	41,142	**62,895**
1987	483	25,100	45,589	**71,172**
1988	471	20,720	46,462	**67,653**
1989	466	19,959	50,085	**70,510**
1990	393	16,493	45,570	**62,456**
Total	**2,229**	**103,609**	**228,848**	**334,686**

Table 6.7 Driver Licence Class Required by Class of Truck Accident 1990

Driver Licence Required	Class of Accident			Total
	Fatal	Personal Injury	Property Damage	
G	230	13,662	36,514	**50,406**
D	38	1,046	3,634	**4,718**
A*	125	1,785	5,422	**7,332**
Total	**393**	**16,493**	**45,570**	**62,456**

* Includes Truck/trailer combinations requiring a Class "A" licence

Table 6.8 Driver Licence Class Required - Accidents, Registered Trucks and Accident Rate 1990

Driver Licence Required	Accidents	Registered Vehicles	Accident Rate
G	50,406	950,193	5.3
D	4,718	60,318	7.8
A*	7,332	98,400**	7.5
Total	**62,456**	**1,108,911**	**5.6**

* Tractor/trailer combination only.
**Includes vehicles registered under the new SVAR system.

Data for truck/trailer combinations requiring Class "A" driver licence are not reported separately in the Vehicle Registration System.

Table 6.9 Selected Factors Relevant to Fatal Truck Accidents1990

Factors	Driver Licence Required		
	Class G	Class D	Class A
Driver Condition in Fatal Accidents:			
Alcohol Involved	22.2%	2.6%	4.0%
Driving Properly	44.4%	60.5%	76.8%
Single Vehicle	29.1%	13.2%	23.2%
Vehicle Defect Present*	3.9%	5.3%	4.5%
Urban	30.0%	34.2%	20.0%
Daylight	61.7%	84.2%	49.6%

*Excludes unknown category

6d. off-road vehicles

Table 6.10 Accident Location by Off-Road Vehicle Drivers Killed and Injured 1986 - 1990

Location	Killed					Injured				
	1986	1987	1988	1989	1990	1986	1987	1988	1989	1990
On-Highway	6	8	2	-	-	106	97	42	24	31
Off-Highway	2	6	5	10	3	89	79	159	124	135
Total	**8**	**14**	**7**	**10**	**3**	**195**	**176**	**201**	**148**	**166**

Table 6.11 Accident Location by Off Road Vehicle Passengers Killed and Injured 1986 - 1990

Location	Killed					Injured				
	1986	1987	1988	1989	1990	1986	1987	1988	1989	1990
On-Highway	-	-	-	-	-	32	32	8	10	10
Off-Highway	3	1	1	-	-	23	22	41	36	43
Total	**3**	**1**	**1**	**-**	**-**	**55**	**54**	**49**	**46**	**53**

For the purposes of this publication, off-road vehicles include dune buggies, off-road motorcycles (dirt bikes), and three and four wheeled all-terrain vehicles. Off-road vehicles were first required to be registered on June 1, 1984.

Table 6.12 Registered Off-Road Vehicles 1986 - 1990

Year	Vehicles Registered
1986	53,943
1987	62,038
1988	68,634
1989	74,316
1990	80,274

Table 6.13 Selected Factors Relevant to All Off-Road Vehicle Accidents 1990

Factors	%
Drivers Under 25 Years of Age	63
Alcohol Used	15
Speeding	31
Helmet Not Worn	50
Daytime	72
Two-Wheeled	21
Three-Wheeled	32
Four-Wheeled	47

6e. motorized snow vehicles

Table 6.14 Accident Location by Motorized Snow Vehicle Drivers Killed and Injured - Riding Seasons 1985/86 - 1989/90

Location	Killed					Injured				
	85/86	86/87	87/88	88/89	89/90	85/86	86/87	87/88	88/89	89/90
On-Highway	6	5	4	2	2	192	137	111	63	51
Off-Highway	9	13	13	27	31	168	143	166	246	250
Total	**15**	**18**	**17**	**29**	**33**	**360**	**280**	**277**	**311**	**301**
% On-Highway	**40**	**28**	**24**	**7**	**6**	**53**	**49**	**40**	**20**	**17**

Table 6.15 Accident Location by Motorized Snow Vehicle Passengers Killed and Injured - Riding Seasons 1985/86 - 1989/90

Location	Killed					Injured				
	85/86	86/87	87/88	88/89	89/90	85/86	86/87	87/88	88/89	89/90
On-Highway	-	-	-	1	-	57	49	28	21	15
Off-Highway	1	1	5	4	5	47	45	53	84	101
Total	**1**	**1**	**5**	**5**	**5**	**104**	**94**	**81**	**105**	**116**

Table 6.16 Registered Motorized Snow Vehicles 1986 - 1990

Year	Registered Motorized Snow Vehicles 1986-1990
1986	237,806
1987	263,681
1988	285,744
1989	308,373
1990	328,343

Table 6.17 Selected Factors Relevant to All Motorized Snow Vehicle Accidents 1989/90

Factors	%
Unlicensed Operators	13
Rider Error; Speed Too Fast	28
Alcohol Used	21
Surface Condition; Icy or Packed Snow	65

6f. bicycles

Table 6.18 Bicyclists* Killed and Injured 1986-1990

Year	Drivers		Passengers	
	Killed	Injured	Killed	Injured
1986	29	4,681	-	41
1987	34	5,093	1	41
1988	43	4,293	-	34
1989	33	4,020	-	139
1990	29	3,518	-	172

*Only accidents involving a bicycle and a motor vehicle or streetcar are required to be reported. These tables do not include bicycle only, bicycle/bicycle or bicycle-pedestrian accidents.

Table 6.19 Age of Bicyclist* Involved in Accidents by Light Condition 1990

Light Condition	Age Groups						
	0 - 5	6 - 15	16 - 30	31 - 60	61+	UK	Total
Daylight	66	1,288	1,343	469	81	234	**3,479**
Dawn	-	2	11	8	-	2	**23**
Dusk	3	71	71	25	2	6	**178**
Dark	1	90	301	75	4	38	**509**
Total	**70**	**1,451**	**1,726**	**577**	**87**	**280**	**4,191**

Table 6.20 Selected Factors Relevant to All Bicycle Accidents 1990

Factors	%
Driving Properly (Bicyclist)	43
Driving Properly (Motor Vehicle Driver)	48
Intersection Related	65
Going Ahead (Bicyclist)	80
Alcohol Related (Bicyclist)	3
No Apparent Vehicle Defect (Bicycle)	91
Clear Visibility	92
Weekend	19

7 conviction and suspension data

The number of convictions under the Highway Traffic Act decreased by approximately 3% from 1989. The number of Criminal Code Convictions also showed a decrease, approximately 7%.

The only convictions which showed an increase over the previous year were seat belt convictions, up by 9%, and other non-pointable offences (22%). All other HTA convictions were down, including speeding , both pointable (6%) and non-pointable (16%).

Alcohol related convictions decreased by 7%. These types of convictions still accounted for 85% of all Criminal Code of Canada convictions in 1990.

Of the suspensions issued for alcohol related offences approximately 58% were issued to drivers with previous alcohol convictions. The increasing percentage of repeat offenders is a continuing trend.

7a. conviction data

Table 7.1 Summary of Motor Vehicle Related Convictions 1990

Convictions	Number
Highway Traffic Act	1,411,357
Regulation H.T.A	3,600
Criminal Code of Canada*	34,389
Municipal By-Law	19,247
Motor Vehicle Accident Claim/Compulsory Insurance Act	42,064
Total	**1,510,657**

*This figure does not include 372 convictions for young offenders under the Criminal Code.

While the number of drivers continued to increase, the number of convictions for motor vehicle related violations decreased slightly.

Table 7.2 Motor Vehicle Convictions Related to the Highway Traffic Act 1990

Convictions	Number
Equipment	31,271
Administrative*	122,440
Seat Belt (Driver & Passenger)**	110,166
Other Non-Pointable Convictions***	13,201
Speeding (< 16 km/h, non-pointable)	433,363
Pointable Speeding	453,639
Other Pointable Convictions (2 - 4 pt)	236,645
Other Pointable Convictions (5 - 7 pt)	19,395
Driving While Suspended	12,827
Total	**1,432,947**

* Non-moving, weight, vehicle registration, licence renewal, etc.

** Failure to wear seat belt convictions registered against passengers over 16 are no longer included.

*** Now includes some out of province convictions.

Table 7.3 Motor Vehicle Convictions Related to the Criminal Code 1990*

Convictions	Number
Alcohol Related**	29,925
Criminal Negligence	36
Fail to Remain at Accident	1,048
Driving While Disqualified	2,230
Dangerous Driving	1,150
Motor Manslaughter	-
Total	**34,389**

*Does not include 372 convictions for young offenders.

**Includes some out of province convictions.

Convictions for alcohol related Criminal Code of Canada convictions decreased from the previous year, but still account for 87% of all CCC convictions. The next largest number of convictions is driving while disqualified for a previous CCC conviction (6.5%), then dangerous driving (3.3%) and fail to remain (3.0%).

7b. suspension data

Table 7.4 Mandatory Suspensions Related to Criminal Code Convictions Issued 1990*

Suspensions	3 Months	6 Months	1 Year	2 Years	3 Years	Total
Criminal Negligence (s. 203, 204)	-	-	18	8	5	**31**
Motor Manslaughter	-	-	-	-	-	**-**
Criminal Negligence (s. 233-1)	-	-	1	-	-	**1**
Fail to Remain (s. 233-2)	2	2	429	324	169	**926**
Dangerous Driving	2	2	558	372	183	**1,117**
Impaired Driving (s. 234)	21	4	5,279	4,966	2,592	**12,862**
Blood/Alcohol over .08	11	6	6,168	5,441	2,564	**14,190**
Failure to Provide Breath Sample	3	2	1,023	915	472	**2,415**
Failure to Provide Roadside Breath Sample	-	-	-	-	-	**-**
Drive while Disqualified or Prohibited	-	-	1,476	658	80	**2,214**
Total	**39**	**16**	**14,952**	**12,684**	**6,065**	**33,756**

* Total issued during the calendar year.

New federal and provincial laws relating to drinking and driving took effect December 20, 1985. Individuals convicted of offences which occurred prior to that date are not subject to the longer minimum mandatory suspension periods of the new laws. Previous minimum suspension periods were 3 months for a first conviction, 6 months for the second conviction within five years and 3 years for a third conviction within five years. The current minimum suspension periods are 1 year for a first conviction, 2 years for a second conviction within five years and 3 years for a third conviction within five years. Of all drivers suspended for alcohol offences, 42% were first time offenders, a further 38% are second time offenders and the remaining are for a third or more suspension. The number of first time suspensions is a decrease of approximately 9% from the previous year. This is a trend that has been continuing for some time. Of the suspensions for driving while disqualified from a previous Criminal Code of Canada suspension, 72% were first time offences.

Table 7.5 Mandatory Suspensions Related to Criminal Code Convictions at Year End 1990**

Suspensions	3 Months	6 Months	1 Year	2 Years	3 Years	Total
Criminal Negligence (s.203,204)	-	-	57	43	24	**124**
Motor Manslaughter	-	-	-	-	-	**-**
Criminal Negligence (s.233-1)	-	-	1	2	3	**6**
Fail to Remain (s. 233-2)	2	2	609	565	372	**1,550**
Dangerous Driving	1	2	785	730	452	**1,970**
Impaired Driving (s. 234)	7	2	6,494	7,765	4,587	**18,855**
Blood/Alcohol over .08	3	4	7,014	7,951	4,062	**19,034**
Failure to Provide Breath Sample	-	1	1,198	1,549	1,056	**3,804**
Failure to Provide Roadside Breath Sample	-	-	-	-	1	**1**
Drive While Disqualified or Prohibited	-	-	3,690	1,707	121	**5,518**
Total	**13**	**11**	**19,848**	**20,312**	**10,578**	**50,862**

** This table reflects the suspensions in effect at year end. The total exceeds the number of suspensions issued in 1990 due to the fact that some suspensions are in effect for more than one year.

Table 7.6 Demerit Point Suspensions by Driver Age 1990

Driver Age	Demerit Point Suspensions		
		Non-Probationary First	Non-Probationary Second
	Probationary	Accumulation	Accumulation
16	630	-	-
17	3,049	2	-
18	4,445	3	-
19	2,919	118	-
20 - 24	6,838	1,796	153
25 - 34	5,150	1,884	192
35- 44	1,332	526	45
45 - 54	328	209	18
55 - 64	88	56	4
65 - 74	10	12	6
75+	5	4	-
Total	**24,794**	**4,610**	**418**

Newly licensed drivers are covered by the probationary licence system until they have successfully completed two one-year periods of suspension free driving. Probationary drivers are suspended for 30 days after accumulating 6 or more demerit points. Non-probationary drivers are suspended for 30 days on the first accumulation of 15 demerit points and are suspended for 6 months on the second accumulation of 15 points within 2 years.

8 appendix

8a. glossary of terms

8a. glossary

Ability Impaired Alcohol:
Driving while one's ability is impaired by alcohol or driving with a blood alcohol concentration exceeding 80 milligrams in 100 millilitres of blood.

Alcohol Involved:
This category includes both drivers reported as ability impaired by alcohol and drivers reported as had been drinking.

Class L Driver's Licence:
The learner's licence that allows the holder to drive any motor vehicle that requires a class G driver's licence (e.g. an automobile) on the road, providing that the holder of a class G licence or any other higher licence class (A,B,C,D,E and F) is occupying the seat beside him/her for the purpose of giving instruction.

Class R Driver's Licence:
The learner's licence that allows the holder to operate a motorcycle for the purposes of training. Class R licensed motorcyclists are prohibited from nighttime riding, carrying passengers and travelling on high speed highways with exceptions of Highways 11 and 17.

Conviction:
Awarded when a person pleads guilty to, or is found guilty of, an offence related to a motor vehicle under any Act of the Ontario Legislature or its accompanying regulations, under the Parliament of Canada or any accompanying order, or under any municipal by-law.

Driver:
Unless specified otherwise, any person, whether licensed or not, considered to be in care and control of a vehicle at the time of an accident.

Fatal Accident:
A motor vehicle accident in which at least one person sustains bodily injuries resulting in death.*

Had Been Drinking:
Driving after having drunk an amount of alcohol not considered sufficient to be legally impaired or with a measured blood alcohol count of greater than zero but less than 80 milligrams.

Highway:
A common and public highway, street, avenue etc., any part of which is intended for public use or used by the general public for the passage of vehicles and including the area between the property lines.

Kilometres Travelled:
Vehicle fleet mileage is estimated on the basis of taxed gasoline and motor fuel sales. Total litres sold are converted to kilometres travelled based on a conversion factor of 22.0 kilometres per gallon.

Major Injury:
A non-fatal injury severe enough to require that the injured person be admitted to hospital, even if for observation only.

Minimal Injury:
A non-fatal injury, including minor abrasions and bruises, which does not necessitate the injured person going to a hospital.

Minor Injury:
A non-fatal injury requiring medical treatment at a hospital emergency room, but not requiring hospitalization of the involved person.

Motor Vehicle Accident:
Any incident in which bodily injury or damage to property is sustained as a result of the movement of a motor vehicle, or of its load while a motor vehicle is in motion.

Off-Highway Accidents:
An off-highway accident involving any of the motorized vehicles which are covered by legislation under the Highway Traffic Act, the Motorized Snow Vehicles Act, and the Off-Road Vehicles Act.

On-Highway Accidents:
A motor vehicle accident which occurs on the highway, between the property lines.

Pedestrian:
Any person not riding in or on a vehicle involved in a motor vehicle accident.

Personal Injury Accident:
A motor vehicle accident in which at least one person involved sustains bodily injuries not resulting in death.

Property Damage Accident:
A motor vehicle accident in which no person sustains bodily injury, but in which there is damage to any public property or damage to private property** including damage to the motor vehicle or its load.

Reportable Accident:
Any fatal or injury accident, or any accident in which there is any damage to public property or damage to private property in excess of a monetary value prescribed in law.**

Suspension:
Withdrawal of a driver's privilege to operate a motor vehicle for a prescribed period of time.

*Prior to January 1, 1982, fatal accident statistics included deaths attributed to accidental injuries up to one year after the accident. Since that date, only deaths from injuries within thirty days of the accident have been included.

** The minimum reportable level for property damage only accident rose from $200 to $400 on January 1, 1978 and rose again to $700 on January 1, 1985.